The Builder.

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Fresh Excavations on the Roman Campagna.

EXCAVATIONS begun last February, near the eighth mile from Rome, on the Flaminian Way, have laid open remains of a Villa of Livia, mentioned by classic writers, and well rewarded the proprietors who undertook these works, supplying one more proof how rich is the harvest to be yet secured beneath the unexhausted soil of the Campagna! The expedition to *Prima Porta*, site of these discoveries, though through one of the least frequented and least monumental regions of the Roman environs, is full of interest and historic association. Crossing the Milvian bridge, we take the road improved, after long abandonment, within late years, and now generally preferred for the journey northwards to Civita-castellana, following the track of the Flaminian, whose ancient pavement is seen, in considerable portions, after a few hours' progress, exactly correspondent to the direction of this modern route. For several miles we have the scenery of the Tiber valley, impressive in its solemn solitude, spread far in view to our right; and at a short distance from the Milvian bridge, we distinguish, on the river's opposite bank, the uncultivated grass-grown mounds where once stood Antemnæ: farther northward are the more boldly-rising heights once occupied by Fidenæ, whose acropolis is marked by a large spectral old farmhouse, called Castel Giubileo, on a lofty promontory conspicuous above all the knolls and ridges around. The direction of the ancient Flaminian Way may for several miles be traced by the frequent ruins of mausolea, once, perhaps, splendid as those in the Appian, but far more dilapidated, probably owing to their immediate exposure to the outrages of successive invaders from the North: their general plan, however, still distinguishable, the prevailing form either circular or conical, with the sepulchral chamber in the centre. More singular is the formation of others seen at different points, close to the wayside, entirely excavated in the tufo rock,—some with vaulted ceilings, hollowed out with perfect regularity, presenting a type of which there is no example on the Appian, unless we may except (what indeed is very different) the subterranean cemetery of the Scipios. A narrow bridge carries us across the Cremera, whose quiet little stream brings to our thoughts Veii, Camillus, and the ten years' siege; while from its grassy banks, at this spot, the eye follows the windings of the long valley, between low uncultured hills, in which that city stood. Not far hence we cross another stream flowing into the Tiber, opposite the mouth, hence discernible, of the Allia, on whose banks the Romans sustained their most signal defeat by the Gauls, under Brennus. A grim Mediæval ruin, that must have had its day of pride in impregnable strength, stands on a precipitous height near the entrance to that valley of the Cremera. From this point extend, left of the road, a series of rocky ridges, lithoid tufo, of reddish yellow hue, adding a finely-contrasted feature to the rather monotonous landscape; and where these rocks rise to their boldest eminence they assume a name for ever renowned in association with an event of mighty import to the destinies of Christian Europe—*Saxa Rubra*—the battle between Constantine and Maxentius, the last decisive triumph over Paganism, having been fought on the wide plain through which the Tiber flows in a broad serpentine channel, below those heights so obviously suited to strategic operations. Beyond the northern limit where the tufo rocks subside into low undulations, a massive ruin, apparently the substructure of an extensive villa, advances from the grassy slopes of a ridge under which the road passes before taking a sudden turn, and bringing us, at an angle, to the little village, Prima Porta, whose sole street is formed by a chapel, an *osteria*, and about a dozen wretched houses. Immediately above, to the right, rises a steep knoll, now identified beyond doubt as the site of the Empress Livia's villa on the Flaminian Way, mentioned by Pliny and Suetonius. Having climbed to its summit, we could not but stop, before pursuing archæologic objects, to admire the grand and extensive landscape here spread before the eye, one of the finest panoramic views of the Roman Campagna. We found on this platform-summit, which is quite without culture, several labourers at work under the superintendence of a proprietor in whom courtesy and intelligence were not wanting. As yet there is nothing to observe on this site except several quadrate chambers opened at a depth little below the level of soil around; and within their areas the remains of decorative painting on stucco, crumbled off from interior walls, remarkable for vividness of tints, but not for any designs or figures on the fragmentary surfaces. All the more precious objects have been removed from these unburied ruins to the deserted rooms of an old house near the village, whither our obliging guide, the superintendent proprietor, conducted us. A rich variety of antiques is prepared to delight the archæologist in this improvised museum, whence nothing has yet been withdrawn: busts, marble and terra cotta ornaments for architecture, several antifixes being among these, fragments of marble reliefs, masons' *signa* on tiles, broken vases of glass, much oxydized; conduits of terra cotta, on one of which is the name Tiberius; and more interesting remains of painting on stucco in style similar to the Pompeian, with figures and heads of good design, the tints here also vividly preserved. But the greatest treasure, the discovery of which has made a sensation in Rome's artist-circles, is a statue of heroic scale (reported to be 11 feet), now laid on its back, at once recognizable as Augustus, and believed to represent him in the deified character; the head and body perfect; the right arm broken off, but happily preserved in numerous fragments; the legs also, and both feet broken, but in no part lost,—so that the complete restoration with the antique material will be an easy task. The countenance is very noble; indeed, among the many likenesses of this emperor at Rome, where they so abound, perhaps the most intellectually-expressive, regal, and serene; the profile, especially, of finest type, and the attitude of correspondent dignity; costume, a richly-ornamented cuirass, chlamys, military tunic, and buskins; and the advocates for the system of applying colour to sculpture will be gratified by the authority here in their favour, inasmuch as the cuirass and tunic retain clear traces of red paint, now reduced to a soft carnation, though not the slightest remnant of tinting appears on the head or nude parts. After we have admired that fine countenance, attention is arrested by the singular beauty of detail in the ornamental reliefs of the cuirass, the part covering the breast adorned by the figures of Aurora driving her quadriga, preceded by the winged Lucifer, and overshadowed by the *cælum*, an aged man with sweeping draperies extended on each side in semicircular folds; in the lower part, Apollo playing his lyre, mounted on a hippogriff; two warriors meeting, one the standard-bearer holding the vexillum with its eagle, the other accompanied by a dog, to symbolize fidelity; a subject province represented by a half-prostrate figure giving up a sword; and lower than these, Abundance, a female recumbent with the cornucopia.

In the ornamental sculpturing of military costume, of which many examples are seen in the Vatican and Capitoline Museums, none equal this latest-discovered example, or attain its effect of delicacy and richness. Noticeable among the other objects are busts, all in good preservation, and of superior style; one resembling Septimius Severus, with peculiarly forked and curly beard, in marble, blackened as if by the action of fire; another of a female, whose elaborate head-dress shows that the artist must have copied a wig; another of a youth, pleasing though not handsome, who wears the toga with a broad laticlave across the breast, here peculiar in being *quintuply* folded, each fold distinctly marked. Two well-finished reliefs of sphinxes are on a species of lappet ornament belonging to the costume of the Augustus; on the fragments of a large urn, which might be a sarcophagus, are other figures in relief, distinguished by beauty and freedom, the subject apparently (to judge from the attitude of one, falling dead or swooning into the arms of another), the slaughter of Niobe's children. On one of the stamped *signa* is a tiny figure of Fortune, in the centre of the disc, with the legend around: OPVS. DOL. DE PRAED. AVGG. EX FIGVLA D. CAECILLIAE AMANDAE. At present the works here are not being carried on with great activity, and the coming season of intense heat will not allow of more energetic pursuance; but we were gratified by hearing from the proprietor that his intention is, when October brings facilities for hiring a greater number, to keep 140 men every day at these excavations. The Papal Government reserves for itself, in regard to newly-discovered antiques, a right of purchase at the terms fixed by appraizers it appoints to estimate their value, but leaves the discoverers at liberty to prefer the offers of a higher bidder. In the year 1862 were exported from these States ancient sculptures of the value of 532 scudi; ancient paintings, 9,596 scudi; the value of *modern* exports that year being, for pictures, 119,537 scudi; for sculptures, 188,325 scudi.

The Pope has given permission, as announced to the Archæologic Academy, for excavating that part of the Palatine declivities comprised within the grounds at the north-western side, purchased several years ago by the Emperor of Russia, but after a time presented by him to the Pontific Government. In course of the works for building barracks within the Prætorian camp have been found several epigraphs, and a subterranean corridor of good construction, supposed to extend far, but not accessible to the public. Also some sepulchres formed inside the cells of the military, without any indication of date, but certainly belonging to a Christian period after the removal of prohibitions against intramural interment.

In the restorations still progressing at the basilica of S. Lorenzo beyond the walls, has been laid open the ancient level of a lateral portico, adorned with frescoes, illustrating that martyr's story, in several compartments, with inscriptions, evidently Mediæval, and concluded to be of the twelfth century; likewise, under the pavement of the present naves, several sepulchres, having in one, near the shrine of St. Lawrence, a body wrapped in cloth of fine texture, which had evidently been embalmed, and was covered by a stratum of plaster. On these remains, attached to the breast, was laid a gold cross, about an ounce in weight, wrought on both sides in niello of great elegance, with the words on the front:—*Emmanuel nobiscum Deus* (the first name Greek, the other words Latin); and on the reverse,—*Crux est vita mihi, mors inimice tibi.* This cross is recognized as one of those reliquaries for wearing on the breast, called by the

Byzantines, *encolpii*,—see the report by De Rossé, in his "Bulletin of Christian Archæology" for April, who conjectures for date of this object the sixth century. The discovery of entrances to two catacombs on the Salarian Way, and in those hypogees some primitive Christian paintings among the most valuable, have been already reported on in a *brochure*, with two coloured plates, by the Abbate Scognamiglio; one engraved original, in this series, the Virgin and Child, with a figure, probably St. Joseph, supposed to be of the first century.

The 21st of April is celebrated by learned societies here as the anniversary of Rome's foundation. In the last instance the members of the Pontific Archæologic Academy* met in the pleasant gardens of Prince Massimo's villa, on the site of the Sullustian, to listen to discourses, and partake of a good dinner. Before that substantial entertainment, Mgr. Bartolini read an essay on the glories of the Eternal City, under Paganism and under the Popes, to an audience including Cardinals and Princes. Before dispersal, Visconti proposed that all should adjourn to the Palatine. There was first inspected the site of the intended (not yet commenced) works of excavating on the Mount's north-western slopes; from thence the Academicians passed into the Farnese Gardens, to examine the excavations so long in progress at that side. Here they were soon joined by no less illustrious a visitor than Pius IX., who good-humouredly attached himself to their party (after, of course, due honours paid), and with the rest listened to the explanations of Signor Rosa, director of these works, undertaken by the French Emperor. We observe a new system in these Palatine Gardens, adopted by Signor Rosa for the information of visitors, carried out to an extent that may sometimes excite a smile from the sceptical, and sarcastic comment from the learned in Roman history. Sign-posts are erected with the designations of the several localities recently brought to light, or disencumbered; and we read in large letters, not only the titles *Triclinium Accademia*, *Clivus Victoriæ*, but such startling announcements as that "*Here* stood the cottage of Faustulus, —'ubi Romulus mansitavit;'" "*Here* was the summit of the staircase called '*Scalarum Caci!*'"

On the 24th ult., the Archæologic Institute, of German origin and supported by German energies, met at their well-stocked library, on the Tarpeian Rock, for the last reunion before the summer recess. To an unusually full assemblage the principal report was read by Dr. Brunn, secretary, who principally dwelt on late discoveries in the Neapolitan States; the remains exhumed at Pompeii, of human bodies as well as artistic ornaments, and various decorative objects, some in wrought gold, from the soil of provinces corresponding to the territory of Magna Græcia. During this lecture were handed about engravings of the more interesting works described, most remarkable being that from a bronze Bacchus,—a statue, below life-size, found at Pompeii; the grace and correctness of this figure, the beauty of the head and general outlines, such as to impress every beholder. Coloured drawings and photographs from Pompeian antiques assisted the audience in appreciating objects described; and in a glazed cabinet was seen a collection of gold ornaments from Magna Græcia, vying with, if not surpassing, the Etruscan jewelry so much admired at the Vatican.

* This Academy was founded by Pomponio Leto, at his house on the Quirinal, already converted by him into a Museum of Antiques, shortly before the year 1482, and the first Christian celebration of Rome's anniversary took place, under the same superintendence, at the Church of Araceli on the Capitol. The Academicians were favoured, and new life given to their proceedings, under the Pontificates of Julius II. and Leo X. They disappeared after the atrocious sack of the city, in 1527, not to be resuscitated till 1700, when Clement XI. became a patron; and since 1814 they have enjoyed an assignment from the treasury, bestowed by Pius VII. Gregory XVI. allowed to them the gratuitous use of the press of the apostolic Camera.

ROYAL ACADEMY.*

IT was hardly to be expected that Mr. Millais would allow his reputation for the year to rest upon two such unostentatious productions as "My First Sermon" (7) and "The Wolf's Den" (498), charmingly simple as they are, and extraordinary for the matured power that signalises them. The merits of these are perfectly unquestionable, and put aside all chance of that discussion which apparently he often delights in provoking. Some such motive must have actuated his treatment of Keats's heroine in "The Eve of St. Agnes" (287). Apart from its pretensions to embody any ideas but those of his own conceiving, this picture, whilst it will dissatisfy as an illustration of the poem, must create wonder at the imitative power that distinguishes it. Moonlight has never been painted with more literal truth; and this interior, merely as an abstract representation, is a triumph over great difficulties, and extorts admiration, however reluctant one may be to accept every-day reality as a medium for interpreting a purely imaginative description. The fault lies in attributing to the picture any connexion with its stated origin. There is nothing to identify the ordinary-looking damsel, in one of the least picturesque attitudes incidental to unrobing, with the exquisite illusionary Madeline; so that there was the less excuse for further eliminating the poet by substituting sixteenth or seventeenth for fourteenth century accessories. Mr. Millais is never so apt an illustrator of others' ideas as of his own: his greatest successes are the best proofs of this; his "First Sermon," propounded upon a very original text indeed; and his admirable little household story, furnished by those eloquent little brothers grim in their wolf skins, about a lovely fairy, of snow-drop notoriety, to wit.

Mr. Cope's name has been often associated with some such pleasant phases of domestic interest as his "Music Lesson" (46) and "Morning Lessons" (221), both having a charm of their own; and Mr. T. Faed, with a more homely force and broader humour, goes to a similar source, though lower down the stream, for refreshment. "Train up a Child," &c. (in the way it should sew?), introduces us to a labourer's family, the head of which is watching with fatherly approval his busy pet of a daughter, seated on his knee, as she carefully sews on a button to the wrist of his shirt-sleeve. This is the most noticeable of Mr. Faed's contributions this year, all marked by the luminousness of colour and dexterous manipulation that are patent to him.

Mr. W. P. Frith's "Juliet" (100) proclaims relationship to many similarly graceful personifications that have preceded it; and although not too efficiently representing its author, it is invested with enough of the painter's fascinating method of execution to make it autographic.

Mr. Elmore's "Lucrezia Borgia" (130), beyond showing superlative technical qualities, is equally striking for definition of character, although his gorgeously-dressed and voluptuously-formed ideal may be somewhat too much in consonance with vulgar presentiment. This performance contains the essence of all that constitutes Mr. Elmore's excellence, and for brilliancy and precision of touch could scarcely be surpassed.

Mr. F. R. Pickersgill's "Isabella, Duchess of Clarence, urging her husband to abandon the cause of the House of York, and support that of Lancaster, A.D. 1470" (140), suffers from its neighbourhood to a consequent charge of appearing more flat than perhaps in the absence of such a contrast would be justified. A sparkling fancy portrait of such another boy in promise and parts as Henry VIII. must have been, before his predilections for havoc *in futuro* had supplanted a taste for bowls and knocking down nine-pins, will attract immediate attention for its elaborated finish and quaint treatment. "The King of Hearts" (146), by Mr. W. Holman Hunt, seems to have been naturally adapted for recalling Holbein and his times, irrespective of artistic fittings.

The veteran, Mr. T. Webster, is as genial in his comprehension of the unaffected enjoyment that would appertain to "A Tea-party" (159), such as he has so pleasantly depicted, as he is sympathetic with the poor bereaved peasant, who, "Alone" (165), is striving to derive consolation from the unfailing source of it. The widower, but just returned from his lost wife's funeral, would appear to offer subject matter for a demonstration of violently-expressed grief, but the excessive refinement with which the struggle for resignation is suggested, has deprived it of none of its intensity; and though the overwhelming nature of his grief is simply denoted by his inability to think of anything beside it,—his eyes dreamily wandering even from the words of comfort he so thirsts for,—the story is much more pathetically told than might have been the case if more dramatic means had been called into requisition. Mr. Webster has many disciples in his adherence to an always popular class of art, and not one more promising, or more likely to become distinctively prominent than Mr. J. Clark. "After Work" (122) will revive some of the anticipations his earliest works excited; for, though not equal to such an instance as his "Sick Child," there is a perceptible improvement upon productions of a later date. It has none of that wooliness and timidity of execution common to these. With less of sentiment, Mr. G. B. O'Neill's works are as generic in their way; "Aunt Deborah's Pocket" (121) and (357) "Public Opinion" inclusive.

The Greek pastoral of Mr. P. F. Poole (191), with some verses to describe it, is less successful as an example of poetic rendering than is customary from him, and more idiomatic of his failings than his strength. Mr. J. C. Hook's "Leaving at Low Water" (335) may be selected as epitomizing the leading characteristics of his style, so delightfully fresh and vigorous, and always without the slightest taint of vulgarity in its realization of truth. His comely fisher-wives, loutish sailor-lads, and sunburnt urchins, become epic, unassisted by adventitious sentimentalism; and his rigid observance of, and confinement to, fact, strangely enough appear to make him inimitable where imitation is easiest.

We cannot yet assimilate the fruits of Mr. F. Goodall's Oriental travel and study with his anterior reputation. His picture of "The Palm Offering" (515), representing an Arab widow carrying palm branches wherewith to decorate the grave of her husband,—according with a wider obtaining custom wherein flowers are substituted,—is powerful, both in its expression and the solidity with which it is painted; but in praising it we retain a preference for much that has preceded it from the same hand.

Mr. F. Leighton's four pictures have high merit, and together compass remarkable talents. His Bible illustration, however, though of the grand historical size, is by no means the most favourable exponent of this. "Jezebel and Ahab, having caused Naboth to be put to death, go down to take possession of his vineyard: they are met at the entrance by Elijah the Tishbite" (382), is the theme upon which Mr. Leighton has dilated with great spirit and force. The amount of success attained in it must certainly be attributed to the executive ability it indicates, and some of it, perhaps, to the tragic fervour of Jezebel. Elegance is very distinct from grandeur; and adopting a wide range of selection in regard to material is no proof in itself of versatility. A taste for extreme elegance is the dominative element in this artist's imagination; and, when appropriately exercised, leads to pre-eminently fascinating results, as will be best asserted by the exquisite incarnation of sybaritic loveliness, "A Girl with a Basket of Fruit" (406), and in a lesser degree by his "Girl feeding Peacocks" (429). On the other hand, how prevailing this influence is, and how difficult of subjugation, is intimated even in the stern, harsh "Italian Crossbow-man" (528), and to a greater extent in the figure of "Elijah," who, rouged giant as he is, threatening to bring away with him some of that fragile wall of the vineyard, is emasculated by the effects of it.

* See p. 325, *ante*.

ARCHITECTURE AT THE ROYAL ACADEMY.*

AMONGST several works exhibited by Mr. E. M. Barry, is a view (910) of St. Stephen's Crypt; and No. 912 is a view of the entrance. According to the original intention of Sir Charles Barry, the crypt is in course of restoration to serve as a chapel for residents in the Westminster Palace. We should have hardly supposed, from recollection, that so good a light could be got, as that shown in the principal drawing. The *severies* of the groining are enriched with floral ornament and monograms on gold ground, and the bowtel mouldings of the ribs with rosettes: the spaces beneath the windows are decorated in diaper with inlaid marble; and the floor is of encaustic tiles. The superaltar, or centre of the reredos, seems to be an ad-

* See p. 328, *ante*.

dition; at least, the detail is not quite in character Mr. Barry's "New Chapel, Leeds Grammar School, in course of erection" (913), has, as shown in the drawing, a crude effect in the painted ornamentation of the main ceiling, or too like floor-cloth. The sacrarium ceiling, having monograms on blue ground, in compartments, is better in character; albeit it may be less novel. There is no strongly defined chancel, or sacrarium arch,—whether the omission be a defect or not: the ceiling only is spanned by wooden ribs rising, as arches, from shafts. A third work by Mr. E. Barry, a completion of one commenced by his father, is exhibited under No. 920, comprising three beautifully-executed drawings of portions of the interior of the Town Hall, Halifax, in Yorkshire. The principal portion, the Central Hall, without our saying that it has very great novelty,—a requisite quality indeed which we both desiderate and fear,—is one of the best designs for the feature of a building suited to such a town, that we have seen for some time. Our readers know we have come to think little of written description, in cases where explanation is peculiarly the office of drawings, as it is so peculiarly in the case of designs which are of the first quality. In the case of the Halifax building, if we might attempt description of the interior, we should say that the main features are the balcony-gallery carried by a bracket-cove, into which groin arches that rise from pilasters at the sides, and the cove and plafond of the ceiling,—the former being, except as to the supporting ribs, completely glazed, and in diamond-shaped panes with star-formed ornamentation at intersections of the bars. A Corinthian order of pilasters in the upper story, a balustrade (inferior to other parts), arch-headed panels for paintings, lunette-spaces for shields and supporters, and statues on pedestals in front of the pilasters of the ground story, complete the design. A council-room and a committee-room are shown as having wainscotting, oak ceilings coffered, or framed in compartments, and crimson and gold wall-decorations.

Coming back to London and its river, we find "The Proposed Tower Bridge over the Thames at the Tower Stairs" (896), designed by Mr. Page. It consists simply of plain arched ribs of iron, and spandrils filled in with light rectangular framing. The piers of the abutments are but poorly designed; indeed the decorative character in the whole bridge, is scarcely what might be looked for in works of which drawings are admissible in the Academy. The bridge is designed for a high-level way, as most of our readers would know. In "The Lendal Bridge on the River Ouse, at York" (904), by the same engineer, there is more attempt at decoration: but it is not quite successful; and the tracery in the spandrils is not good, regarded from the Gothic point of view. The toll-houses and abutments are castellated or Gothicised; and the arch-opening appears to be slightly pointed. These peculiarities are no doubt induced by desire to conform to the *genius loci*. Useful inquiry might be opened into the question of the obligation to make the efforts as in the case of an association of position of new works with others which may be of much earlier date, and of different style to any prevailing in our day, conformable to such date and style. Ought Telford to have designed the piers or towers of the Conway Suspension Bridge, as he did design and build them, to appear as outworks of the castle? The public approve in that case,—see every guide-book to North Wales,—whilst the engineer of a second Conway bridge decides any question that may have suggested itself to him, as did his predecessor. Can the engineer and architect, knowing that suspension and tubular bridges are creations of modern days, assent to the mimicry which there is in certain features of these Conway examples, for the sake of the good word of his constituency, the less-educated public? Are the gentry of Wales right in building their mansions on the type of Caernarvon and Chepstow Castles,—considering that the harmony which is thought to be attainable, results in deception, and in an impression when the true character is detected, that the work is childish? The employer who pays the cost, will often have "his way;" but a profession of artists should have a defined principle to govern its advice, if not also to act upon.

Captain Fowke exhibits two views (905, 929) of a "Design for Completion of the International Exhibition Building," which suggests too strongly the Louvre. In the Exhibition-road front, we find the centre extended in appearance of width and height, and the dome modified greatly, if not rebuilt. Amongst the features coming from the Louvre, and placed exactly as they are there, are the Caryatides; whilst in the angle pavilions, the form and general treatment of the roofs are no less copied. An order of engaged columns is combined with that portion of the new façade in which the mosaic pictures would occur. The Cromwell-road front would be little different from the other, excepting in the greater width of the centre portion of the design, and in the absence of the dome, as at present.

"The Palace Hotel, Buckingham Gate" (918), by Mr. John Murray, is a pretty accurate transcript of the Italian manner of Sir Charles Barry. It would be a valuable addition to the architecture of London, were the material any other than cement. This material is, we apprehend, to be used by Mr. Marrable in the Italian front of the much smaller building, for the Garrick Club (now erecting in the new street leading from King-street to Cranbourne-street), a view of which with adjoining buildings is shown in the drawing No. 909. The staircase, having nothing in it, but an oval in the ceiling, to redeem the whole from common-place, appears in No. 931. In the front, the doorway is neither in the centre nor at one end; and the result so far, is not good. Otherwise, with a more pronounced character in the ground-story, the design might have been effective in stone: cement, if used, should have a treatment for itself; although, in any case, it blackens sooner even than the other material; and three years may be taken as the utmost life-time of the best design. After that, the process of clogging-up and rounding-off by the application of paint or wash sets in. A view of the Board-room of the Metropolitan Board of Works (907) is shown by the same architect. There are features of the interior of that building which are more creditable to Mr. Marrable's taste, as well as professional skill. A drawing (915) of the Langham Hotel, of which a small photograph was noticed by us in the Conduit-street exhibition, is exhibitited by Mr. J. Giles, with whom is now associated Mr. Murray. Six stories of windows, mostly arch-headed, whereof one story is in the *cornicione;* a high-pitched roof with dormers and lucarnes; two projections in the north front, well treated as pavilions, but having bows, each of only two stories and not exactly harmonizing with the rest of the building; a rather awkward arrangement of re-entering angles and a cant to suit the rounding-off of the north-east corner, where a square and domical-roofed tower is placed, are the main features of the design. Though amongst these features are several which detract from the work, the northern façade, if in stone, will be an addition to the better part of the London architecture. The building will however, be fatal to the portico of Nash's church, which abused though the building have been, deserved a better fate. Is there to be attempted, the institution of some machinery of Government, or the Academy, by which can be prevented these interferences by private rights, with the public right in a prospect or a piece of architectural effect.

The manner of Sir Charles Barry before named, is very marked in the City of Norwich Hotel as proposed to be erected by Messrs. Banks & Barry. The drawing (928) shows also the intended Public Assembly Rooms. The building would have the feature of a clerestory with a modification of buttresses, and with arch-headed windows. A pediment with sculpture; a line of louvre-ventilators, breaking each slope of the roof; and a two-storied projection at the end of the building, superpilastraded, are some of the other features. That portion of the building corresponding with aisles, has pilasters or piers, round which the cornice breaks, combining with the buttresses. The windows here are in two stages, the upper one being square-headed; and the working out of this arrangement is almost the only detraction from what is a very good design. The building would be of brick and stone.

Mr. G. G. Scott's drawing (914) of the new Leeds General Infirmary, is one of the cases where section, if not also plan, (the slightest sketches,) would, — even in the Royal Academy intention of exhibiting architecture, the art,—have been useful, and important to fair criticism. The arrangement of the buildings as a central block and two side blocks, is, judging from the view, the system of the plan; which thus, may be in accordance with good principles of hospital-planning; but as the whole of the window-lights are pointed, and the majority of the heads are large and filled with the Early-Decorated character of tracery, we cannot help desiring to know that the upper parts of the wards are so well lighted and ventilated, as they would be with the use of horizontal lintels, and window-heads close to the ceiling. This may not be the first time that we have found this question suggested by designs of a similar character of architecture: the question is one peculiarly appropriate for renewal in the case of a design for a hospital, and as illustrative of our point, the insufficiency of mere views. It might not be at any time satisfactory for the exterior of a building to give the idea of internal closeness and darkness; but where it were *shown* that the case was not so, we would accept the facts as artistic justification enough. Top stories seem to be lighted by dormer windows: are the ceilings which attend the use of such features, favourable to hospital uses? The carriage-porch, parapets, and gables, and other features,—in red brick and white stone,—have all the character of Mr. Scott's recent works; which is saying that they have some considerable beauty and merit.

A design for the Queen's Hotel, Aberystwith, by Messrs. C. F. Hayward and H. D. Davis, is exhibited in No. 923. The building promises to be, in character, an effective combination of features suggested by both the Italian and the Gothic, without the features being copied from those of either style, or suggesting the superiority of any particular examples. Such is the course which modern design should take, whatever may be the estimate of the success in the present instance. The continuous balcony to the second story, the balcony and verandah in one of the upper stories, and the balconies at canted angles of pavilions of this hotel, are features which are well managed, seeing what are the uses of the building, and the economic stone-construction throughout.

The hotel at Cannes, in France, appears as the principal work in a view (900) of buildings erecting by Messrs. T. Smith & Son. It is in the French Italian style; and the superiority in all points of its design to that of the other buildings, some of which are English Gothic, is noticeable, and curious as fact.

Several drawings of churches may be found. Mr. Burges exhibits a view (925) of the interior of Cork Cathedral according to his design; it comprises the apse and the cross. We give an engraving of this interior, a plan, and some particulars, in our present number.

Mr. Street is clever, as he always is, in the Church of All Saints, Denstone, Staffordshire, views of the interior of which (903) are shown. Mr. Bury is correctly Gothic, and able, in all the grouping and details of his "Decorated" church erected at Hanger-lane, Stamford-hill (893); Messrs. J. & H. Francis exhibit a view of Christ Church, Paddington (906), with the tower and spire which they are about erecting; and Mr. P. C. Hardwick shows a clever design for a red brick and stone, "Decorated" Gothic church, "now being erected at the permanent barracks Aldershott" (895). Mr. T. H. Wyatt, Mr. E. B. Lamb, Mr. C. H. Cooke, Mr. R. P. Spiers, and Mr. D. Brandon also are amongst the exhibitors. Mr. H. E. Coe shows an interior view (926) of "St. Philip's Church, Lambeth;" Messrs. Pugin & Ashlin a good drawing of a cathedral (935), and Mr. R. M. Phipson views (932, 938) of St. Mary's Tower Church, Ipswich, which is being nearly rebuilt under his care. An interior view of his theatre, Bath, already described at some length in our pages, is exhibited by Mr. C. J. Phipps (933).

An interesting production, the last of those in the exhibition, that we can name, is Mr. Ashpitel's "Restoration of the Basilica of Constantine and Maxentius, from a very old plan in the Royal Library at Windsor" (902); but unless Mr. Ashpitel have positive authority for more than plan, we should be apt to doubt whether the details of some of his windows, and the manner of his rustication, may be regarded as of the Roman period of architecture in Italy.

We now terminate our series of notices of the chief exhibitions of architectural drawings of the season. It may not gratify our readers next year to have a similar review, at the same length; but we could not, in this case, allow opportunities to be lost, of saying many things which we believe, in the present state of the art and profession, need to be said and repeated; and we hope that in taking advantage of productions in either of the exhibitions, for the remarks that perforce suggested themselves,—or of buildings, few of which are not in some way honourable to their architects,—we have had approval even from authors of designs that may have been commented upon. Our general aim is obvious; and could we succeed only in getting improvement effected in the manner of the exposition of architecture, especially in the Academy, — in getting substituted the nearest approach to the thing itself, for the single perspective views which offer but one small part of it, —we should claim to have done something towards

the proper placing before the public eye of the thing, not "pretty drawing," but real architecture.

BRITISH SCULPTORS.

THE FAMILY OF "THE CHRISMASES."

IN his chapter on "Painters and other Artists in the Reign of James I.," Walpole has properly included the name of GERARD CHRISMAS. To the little that Vertue had collected about Chrismas, and Walpole bought of Vertue's widow, the noble author in white kid gloves added a stray fact or two. A waif fact and a worthless inference were added by Walpole's first editor, Mr. Dallaway. To these slight materials for making the family of "the Chrismases" known to all who study the history of art in England, Mr. Wornum, Walpole's second and last editor, has contributed "nothing." To the little of Walpole and the "waifs" and "nothings" of his editors I have something to add.

When first at Guildford, in Surrey, some sixteen years ago, looking about me for materials towards a long-promised "Handbook to the Environs of London," I (purse in hand, as in duty bound) sought a tourist's admittance to Trinity Church, an ugly red brick rebuilt edifice of the Batty Langley age, pleasantly seated in a very pretty and clean town. My principal business purpose for the day was to stand by the tomb of George Abbot, Archbishop of Canterbury, a Guildford man, and a man of note in a stirring period of English history. One reflection that passed through my mind at the time deserves historical remembrance for its contrast and its truth. Dates are suggestive. On the very day that Abbot died, Laud, bishop of London, translated to Canterbury on Abbot's death, was offered a cardinal's hat!

The monumental effigy of Archbishop Abbot was more than "up" to my expectations. I scanned the tomb narrowly, and to my surprise observed what no historian of Surrey tells us—not Manning and Bray, not even Brayley,—what no historian of art tells us,—not Walpole, not Dallaway, not even Wornum,—that the tomb of Archbishop Abbot carries its sculptor's name. Abbot's tomb was the work of Gerard Chrismas and his sons.

Who were his sons? Another shilling spent at the "Prerogative Will Office" of the Archbishop of Canterbury in Doctors' Commons, and my curiosity was slaked. Garrett or Gerard Chrismas, "*citizen of London, and carver*, weak of body but strong in faith," made his Will in the year 1633, and died in 1639, new facts both in the sculptor's history.

Readers of the *Builder* will be pleased with a few particulars from a source so authentic. The citizen and carver leaves his wife, Rachel Chrismas, his executrix, and hopes that his children will be "kind and dutiful to her" . . . . "for she hath been a good mother unto them, and a careful and faithful wife unto me." To his sons John and Matthias he leaves forty pounds a piece, hoping "that they will be helpful and assistant to their mother, in completing such works as he is engaged upon, and in collecting such debts as may be due to him." Besides John and Matthias, he had five other sons and three daughters. His son Daniel was a source of trouble to the old man, and his Will marks his displeasure. "To my son Daniel I bequeath five pounds only, inasmuch as he hath been an undutiful son, frequenting gaming-houses," &c. Other items supply materials. He mentions his lands in Kent, which he had bought of his brother-in-law, John Honywood; and a debt of three hundred and forty pounds due to him from the Commissioners of the Navy. Was Rachel Chrismas, Rachel Honywood by birth? and when did she die?

The poetry of a Lord Mayor's pageant of the year 1622 lets us into a fact about Garrett Chrismas that Walpole would have seized and turned to good account when, in his *Anecdotage*, he was correcting and enlarging his delightful "Anecdotes." His editors might have done something with it, and with effect; but they have wholly overlooked it. London's "splendid annual" or new Lord Mayor for the year 1622-3, was Peter Porby, grocer, afterwards Sir Peter P., and a turtle-feeding—Ward—worthy of his day. Sir Peter having a taste for poetry, called in the City poet and City chronologer to his double triumph, Cimon-like, on "land and wave." Thomas Middleton, the dramatist, was the City poet; and Garrett Chrismas was the City Bunning of the year. Their joint labours are part preserved and part commemorated in one of the rarest of the printed City pageants. Mr. Dyce knew nothing of it when, in 1840, he collected Middleton's works. The "noble solemnity" of the day is entitled, "The Triumphs of Honour and Virtue," and it is easy to see that it was a fine one. The poet was pleased with his City Inigo. "For the body of the whole triumph," he says, "with all the proper graces and ornaments of art and workmanship, the reputation of those rightly appertain to the deserts of Master *Garret Crismas*, an exquisite master in his art, and a performer above his promises."

This joint labour with Thomas Middleton was not Gerard or Garrett Chrismas's sole connexion with the City-writing Tom-Tits of his time. The Ironmongers—the tenth on the list of the twelve great companies—called in his aid once with Thomas Dekker, the dramatist, and antagonist of Ben Jonson; and at another time with Thomas Heywood, the most prolific and not by any means the worst of the great and prolific school of Shakesperian dramatists. A recent excellent "History of the Ironmongers' Company" has supplied these new facts in illustration of the history of literature and art in this country.

As I continue my contributions, your readers will find that I have new materials that will both amuse and instruct "architects, engineers, operatives, and artists,"—in other words "master and man," and the "general reader," touching master carpenters and master masons, "joiners and ceilers," painter-stainers, &c., &c., in relation with employers and employed; bearing on tenders and contracts, contingencies and extra charges, wages, extra hours, horse-hire, boat-hire, percentages, old stores, perquisites, and—vails.

PETER CUNNINGHAM.

ON CONSTRUCTION AND ORNAMENT, OLD AND NEW.

A LECTURE was delivered on Tuesday evening, the 5th inst., by Sir Henry Dryden, bart., on the above subject, before the subscribers to the Architectural Museum, at the South Kensington Museum. The chair was occupied by Mr. Beresford Hope, M.A, D.C.L., president of the association, who introduced the lecturer.

Sir Henry Dryden said, that a recent writer of very great common sense had told them that the population of England consisted of 17,000,000 of people, mostly fools. In all human probability he was a fool to come there to lecture, and they—the audience—were fools to come there to listen. Another writer, however, had said that it was the part of wisdom to suffer fools gladly. Almost every audience consisted of three classes: one consisted of those who knew all that the lecturer spoke of much better than he did himself, of which class many were no doubt present: the second were so afraid of dictation that if they were told to go to heaven they would ride straight—elsewhere: the third consisted of the small portion of the assembly who could learn something from the lecturer, and to those he addressed himself. He had been told he might lecture on anything connected with art and architecture, but that he would have to address professional people, art workmen, and ladies. He feared it would require more talent than he possessed to please them all. It would be tedious in a mixed audience to enunciate the arts and sciences implicated in architecture: they were chiefly those with which the designer, the mason, the carpenter, the carver, the smith, the painter, and the glazier had to do. Much had been said and written about the similarity of form, colour, and sound. He had read and heard a good deal about it; but could not see its practical use, although there might be some coincidences. They were told that they could fiddle Salisbury Cathedral, paint God save the Queen, and carve Rule Britannia; but he advised them not to trouble their heads about it; and if they wanted coincident matters, to study a Welsh triad. In reference to the immediate subject, he might say that in old times they strove much for religion and little for bodily comfort: they built great churches and small houses. Now, however, it was all the other way: they built large houses and comparatively cheap churches. The old houses were gone—at least, the most of them,—but the churches remained. Castles had disappeared, or become ruins, or were amalgamated, because we enjoy peace, and they could not be made efficient for the purposes of modern warfare. A new castle in Mediæval style was frightful folly, and when attempted was never really carried out. They confessed their inability to invent beauty, and had therefore to go back to the old models. It was true they invented bridges, and railway sheds, engines, and carriages, and things of that sort, but that was far from inventing beauty. If they were to collect all the cemetery chapels, and all the cemetery monuments, and all the gate lodges in Great Britain, he believed they would have the best collection of ugliness in the world. Some very few of the monuments were by themselves tolerable, but a crop of them was detestable. It seemed as if the aim and object in the construction of lodges was to make them small and uncomfortable. Often the poor old gatekeeper had to go over the way to bed, running the risk of catching bronchitis on the way. If a lady ordered a pair of shoes, or a gentleman a hat, which they could not get on when sent home, they had a right to complain; and in like manner, if a building erected for them was not fit for use, they had a right to complain. It might be fairly required that a church intended for the service of the Church of England should be fit for the performance of the Liturgy, and afford room to stand, to sit, and to kneel in the pews, within the meaning of the Act, and that the building should be capable of being filled by one voice. For the Scotch Kirk they might reasonably require room to sit and stand in the pews, and to see the preacher. Of late the Dissenters had been aping Roman Catholic architecture. For the Roman Catholic Church the requirements were pretty much the same as for the Church of England. If any person or persons wanted a church to be built, and found the cash, or could delude other people into giving it, surely they had a right to build as ugly a thing as they pleased, under the guidance of that eminent architect "A," or "B." If they pulled down an old church, that was another affair. It might be thought, also, that they had a right to make their new horror as unsuited as they liked for its purpose; but he did not know whether they had a moral right in all cases to do this, as perhaps other people would have to pay for the service. A hundred years ago, new churches were generally a parody on Roman architecture: now they were generally a parody on Mediæval architecture. No doubt there were some fine churches built, but there were many obstacles to the building of good churches. First, there was the avarice of this age and nation. Men became architects to get money; and though many, he hoped, had a true admiration for the beautiful, yet the hurry they were in to get the money,—that is, to get into lucrative practice,—prevented, in general, due preparation for their calling; and, in particular, due preparation for each separate work. In old times the architects frequently were provided for in other ways, and often lived close to the spots on which they were to build. The buildings were often years in hand, and, he supposed, had the undivided attention of the architects. The wages were lower than now in proportion to other things. The question of price was a difficult one for the architect to face. A loose way of getting at it was to add together the value of a bushel of oats, wheat, and barley, and to compare that with the price of the labour in question. The attention of the architect nowadays is too much divided. He was expected to be able to furnish plans for churches, schools, houses, cottages, stables, dog-kennels; and what therefore could be expected? If he was a good church-architect it was ten to one that he would not know how a horse should lie down or how a dog should be benched; and if he knew the latter the chances were that he was not a good church-architect. That was, however, altogether a question for the public. In houses down to the seventeenth century ornament seemed to be very much studied. Somehow modern architects did not hit the thing off. The new was often no more to the old than boys' Latin was to the verses of Virgil. Our fathers, however, made mistakes too. It should be remembered that building differed from designing. They might have a good design badly built, or a bad design well built. The mistakes made by the Mediæval men were chiefly those of construction. Their foundations were often bad: their walls were rubble: their mortar was bad: their roofs were bad. The Romans built well, as the walls and buildings still remaining attested. Chichester and Hereford showed bad mechanics and bad construction. In the one case a heavy spire, and in the other case a tower was placed on a Norman substratum not meant to carry any such thing; and the consequence was that the one was down and the other only saved by a good mechanic. Our ancestors made occasional mistakes in design, too. In the west front of Peterborough Cathedral three huge arches were to be seen, very fine in themselves, but carrying nothing, and the centre arch being the smallest. Amiens and Notre Dame had each three great arches too, but they were made subservient to the upper portions of the buildings; and the centre arch in each case was the largest. The fact was that nature was often

perfect, art never. Look at the sea, the sky, or a piece of down: who would wish to take a flake from the sky, a ripple from the sea, an undulation from the downs? But scarcely anything could be looked at that man put his hand to that satisfied the eye. One of the greatest obstacles that lay in the way of attaining to anything approaching perfection was the straining after unmeaning oddities. When this mania for "quaintness," as it was called, seized a man, it was all up with him. There certainly existed the power now to do good work. Workmen are now more skilful in the use of tools than of old: the great desideratum was skill in design. It was good to be a ready copyist, but it was better to be a ready designer. It was not shortness of funds which made bad buildings: a good architect cut his coat according to his cloth. In old times they had to put up very simple buildings as well as those of a more elaborate kind. Many of these remained, and all were in every way excellent as regards design and proportion. Unfortunately there was no fixed rule of proportion or of beauty. No doubt rules existed, but they were not always alike; and probably every form and every proportion was good in some position. After all, they should argue from their eye to their rules. How volatile was taste. The ladies had but to think of the style adopted by their grandmothers and compare it with that adopted by themselves. With respect to the male sex, too; how great was the change a few years had made. When he was at college a man did not wear a hair on his chin: now a young fellow looked like a cross between a goat and a sky terrier. These things could not be brought to a given rule. What was commonly called common sense was very uncommon; and the common sense of a person educated in a particular subject was very different from the common sense of a person uneducated in it. But even people of equal education and ability did not come to similar conclusions. Much should be allowed for the constitution of the mind and the eye. His eyes were very different from those of other people who had had equal opportunities. He had often seen new buildings which appeared so ugly to him that they almost made him ill; but others held a different opinion with respect to them. He could not understand how the east window of Carlisle Cathedral was less beautiful than the east window of Gloucester or of York. No doubt, the architects who despised the latter thought theirs the best. The only conclusion he could come to was, that the eyes of different people had different constitutions: what appeared beautiful to one, did not appear beautiful to another. He hoped to set his audience a-thinking; and if he did, it was no matter whether they all arrived at the same conclusion. Much had been said as to the right tendency of architecture. Some held that it was perpendicular, others that it was horizontal: he thought both were wrong. The great Architect of the Alps, the Andes, and the Peak of Teneriffe, pointed it out unmistakeably. All architecture was upward convergent, but in different degrees,—at least, those buildings pleased best in which this tendency was most strongly apparent. Of course, if pushed to the extreme degree, they would have the pyramid. In designing a new church, the churches of the district should be studied, and local peculiarities should be adhered to. The national styles should be retained, instead of going abroad for models, unless some practical defect in the national was removed by the foreign. With respect to the new Foreign Offices, the most foolish objection that had been made to the adoption of English architecture was that it did not admit the light. The fact was, that the Elizabethan style, and that of the time of Henry VII. and Henry VIII., gave perfect lanterns, and the houses were, in consequence, so cold in winter that they could scarcely be lived in. As a rule, the Elizabethan houses had light on three sides, and what on earth was wanted more for the Foreign Offices in that respect? It might be interesting to state that the church of Clapton, in Northamptonshire, had been pulled down, and he had taken accurate measurements of it. The chancel arch was pointed, with the hood-mould zigzag, and one of the stones of part of a cross, with plait-work on it. The tower of that church had this peculiarity, that it was perfectly free, and without one single tie, although the arcading came up to it in the usual way. The first thing in designing a building was to have its proportions good. The doors, windows, and so forth should be in good proportion to the other parts of the building. A common error was, not to begin high enough,—that is, not to have made a platform. The platform and the plinth were main items in giving the upward convergency, of which he was an advocate. The platform allowed for accumulations around the building, and for its sinking, for it was a well-established fact that all buildings sink. The Greek temples were all put upon steps, and the steps were used for the purpose of giving the upward convergency. The steps were so high that no one could step up them, but real steps were put in the apparent steps. The people, however, who carried out the platform system to its fullest development, were the Mexicans: all their temples were to be found so placed. They never began building until they had the platform so constructed that a grand effect was secured. The Eleanor Crosses were all placed on steps. Lincoln Cathedral was high, so was Exeter. No one liked to go down to a house: he did not allude to houses in valleys, but to the ground just around them. When wishing to make a sketch, a man moved about until he got things into good relative places; and so in designing buildings they should have regard to the directions in which it would be viewed, and to the surrounding objects. Persons came up to London, and were quite disappointed if an architect did not knock off the plan of a house to be built hundreds of miles away, totally irrespective of whether it was to be built on the top of a Welsh Mountain, or on the flat of a Lincolnshire Fen. These people clearly belonged to the seventeen millions to whom he had alluded in the opening. Having got good proportions, the next thing to attend to was to have good foundations—a matter too often neglected. Often, too, walls were not wetted enough. Good walls could not be made with dry stones. When a building was pulled down the foundation was always hardest, because kept damp. He considered plinth very important where the object was, as it should be, to secure pictorial effect. Many architects rejoiced in putting windows "of sorts," as the cotton spinners would say; but these belonged to the "quaint" order of which he had made mention. In many churches,—Exeter, for instance, the general outline was the same, but the tracery differed. With respect to roofs, he believed that the imperfect construction of old roofs had done more than anything else to destroy the walls. A wooden roof was supposed to support itself; but a vault was supposed to be supported by abutments, which were often found to be defective. Our ancestors were not up to roofing. They never acted on the plan of bolts and straps. They thought massiveness of timber would keep the roof firm, but they were mistaken. It was a pity that they did not use a few pennyworths of the iron that they made use of elsewhere in binding and strapping the roof. He might mention that he found square-ended tiles and slates best. The fancy tiles did not fit the valleys; and that cast lead he had proved to be better than rolled. With regard to glazing, bad painted glass was worse than plain quarries. The quarries should always be in proportion to the size of the opening. Some stanchions were outside, and some inside. There were objections to both, but he liked those inside best. He had never studied painted glass, and, therefore, only looked at it as a skeleton. He considered that painted borders or beads to plain windows were very ugly; but he approved of a grey border to clear the tracery. He could not admire figures in impossible dresses, or in queer postures, or a subject carried across the tracery. Modern glass failed from want of granulation, from want of variety. As to flooring, carpets or matting had no business in churches. Tiles, stone, or marble should be used for the passages, and blocks of wood for the pews. He preferred, for appearance sake, to have the floor of the pews a few inches above the floor of the passages. The seats should be sufficiently large, and provided with kneeling stools. Ornament was of two kinds,—one that which was necessary, the other that which was adopted for the sake of ornament. The first was best, but the line left was very vague. Light and shade were equivalent to form; for without shadow we see no form, and without form we see no shadow. As in a picture so in a building,—various degrees of light and shade are required. There was often poverty of shadow from too slight a projection of gables. He believed that the earliest ornament to be found in this country was the plait work, or Runic knot work on crosses. At all events, it began in Saxon times, and was imported from the North. The mouldings of doors and windows should be different planes, and the effect was best when the planes were decided. The style of ornament should be regulated by the materials, metal, wood, or stone. He would not go into symbolism, or into conventionalism; and all carving of natural objects should be conventional to some extent. The eye and the mind should be satisfied in consistency, in form, in elaboration, and in colour. With respect to restorations, much was heard of the term, but little was seen of real restoration. Old churches were numerous; and various causes led to their wanting repairs and restoration. Restoration was a putting a thing back to a state in which it once was. A considerable portion of architects' business, as a body, was repairing old churches. The more money was spent on the building the more the architect was paid; so that the profession of an architect, or of a carver, or builder, was exactly opposed to the conservation of an old church or house. A very high-principled fox might refrain from annihilating the fowls of a squire who allowed him free run of his rabbit-warren, but the fowls' chance was bad. With a new church the case was exactly the reverse of what he had stated. More damage had been done to old churches in the last thirty years than in all the preceding years from the Reformation downwards. The Puritans did comparatively slight damage, and what they did was apparent and unmistakable. He need not argue for the importance of history. Old buildings were the material unlying records of a nation's history, and as such could not be overvalued. When an architect inserted his own new windows and doors instead of the slightly damaged and perhaps less pretentious ones he found; when he re-faced or perhaps *de*-faced the wall, and moulding, and pillars,—when he substituted new foliage for the damaged capital, he destroyed one atom of the annals of art—one line of the churches' evidences—one small portion of England's history. While there were few good restorations, he admitted that there were many beautiful new churches. He hoped that in future restorations the utmost care would be taken to restore, and not partially to construct anew,—not alone in point of material but in point of style.

THE ARCHITECTURE OF SPAIN.*

IT is much to be regretted that the architectural monuments of Spain, which, through the circumstances of the history of that country, are a subject of deeper interest, and replete with more distinct and impressive lessons to the architect, than those of any other country, should be the least known of any in Europe. Indeed, in a degree to be of value to the architect (with few exceptions), the most noted of which is that of the Alhambra (so elaborately described by Mr. Owen Jones), they cannot be said to be known at all. I have not the presumption to pretend, in my paper of this evening, to make good that deficiency; for, although it has been my good fortune to contemplate those memorials of greatness and perfection in one of the most beautiful of the fine arts, I have done so without the culture of the professed architect, without taking necessary measurements, or analyzing the causes of those impressions of elegance, of playful fancy, of beauty or sublimity with which they struck me, being satisfied with the enjoyment of the effect that they produced; not contemplating that I should ever have the honour of addressing you (as this evening) upon the subject; and also not having provided myself with those plans and elevations of them, or even pictorial representations, which are almost essential to their perfect illustration; and without which, I fear, my descriptions may be but imperfectly understood. The only thing which is in my power and capacity to do, is to point out to you many of those monuments of architectural greatness which have been slightly alluded to, or wholly overlooked, whether from the imperfect information we possess of them, or from whatever other cause, by the greatest of the architectural historians and critics of our time, when treating of Spanish architecture; and to trace generally (though perhaps imperfectly) an outline of the course that architecture has pursued with the Spanish nation in its rise and progress, its culminating excellence, and its florid decadence;—in the course of which, indeed, it presents more salient points, more distinct phases, than the architecture of any other European nation.

I have said that the circumstances of the history of Spain impart an interest to its architectural monuments possessed by those of no other nation. Successive and distinct races of men have flooded, and held sway in, the Peninsula. The periods of their existence may be likened (to compare small

* Read by Mr. Hurlstone, President of the Society of British Artists, at the Architectural Exhibition, on the 12th inst.

things with vast ones) to the successive geological eras in the mighty history of the Earth, and to the distinctive fossil petrefactions which mark respectively those eras. The architectural monuments which these races of men have respectively left are the greatest and most impressive, if not the only, symbols of their history, their power, and their vigorous existence. And here let me remark a circumstance which colours with absorbing interest the architectural monuments of Spain,—a circumstance, indeed, which could not be otherwise in the loftiest development of a fine art like architecture, inferior to no other,—that, notwithstanding the architectural structures erected by those successive peoples who have ruled the Peninsula, were built under precisely the same necessities,—notwithstanding they were raised in the same climate, as shelter from the same heat, or protection from the same weather, and each alike displaying the perfect fulfilment of all those conditions of necessity and utility which, although the prosaic side of the art, are never absent from good architecture,—yet they are so utterly dissimilar in taste, and in the impressions they convey to the spectator,—are so stamped, if I may so say, with the idiosyncracy of the respective people who produced them,—that they scarcely seem the work of people inhabiting the same globe, or at least the same hemisphere;—so much so that when through any circumstances they happen to be placed in immediate juxtaposition (as in the instance of the Alhambra of the Moors, and the Palace of Charles V. of the Castillians, to which I shall have occasion to refer at large) they give an indescribable jar or shock to the taste from their discordant incongruity, though each among the finest examples of their respective styles as developed by a different people. Of the Phœnicians, and their colonists the Carthagenians, and the original Iberians, there are, indeed, no unquestioned works existing. The Torre del Or,—which is one of the characteristic features of Seville, standing near the spot of disembarcation by the visitor who arrives by the Guadalquivir,—a perfectly simple (even rude) octagonal tower,—has been considered the work of the Carthagenians by some, though by others attributed to the Romans; and some portions of the towers of the Alhambra are previous to the Roman time, probably erected by Phœnicians or Carthagenians. Of the Romans, it is certain that they covered the Peninsula with cities, and that at a comparatively late date of the empire. One of these cities,—celebrated as the birthplace of the Emperors Adrian, Theodosius, and Trajan, and the philosopher Seneca,—Italica,—stood a few miles higher up the Guadalquivir than Seville. It presents at this day a heap of disformed and buried ruins, which have been a quarry for the Moors in the erection of Seville, if not for the Christians who succeeded them. The countless small marble columns, about 5 feet in height and 1 foot in diameter, so numerous that they appear like the spontaneous productions of nature rather than the work of men's hands, which one meets with in all positions and circumstances in Seville; sometimes really forming parts of architectural design, but more frequently used for the baser motives of mere utility; and as often not that, but merely embedded in the walls, and thrusting themselves forward in strange places or chambers, to the great detriment and inconvenience of the occupants, were doubtless derived from Italica, and testify to the extensive Roman architectural constructions there. But although the Romans, as I say, covered at least the southern part of the Peninsula with cities, yet very few and imperfect examples of their temples and their civic or domestic architecture now exist: nevertheless, they have left the impress in Spain of their genius and their power in the grandeur of their works,—in those works in which they were truly great,—for the Roman style of architecture, in their temples and civic edifices, was never perfected,—I mean their bridges and aqueducts. In this view Spain may be said to display the architectural genius of the Romans in its most impressive form better than any country of Europe, even than Italy itself; for here the aqueducts and bridges which they erected are on a grander scale. The aqueducts of the Campagna of Rome, which present so striking a feature viewed from St. John Lateran, are comparatively insignificant to those of Spain. One of the noblest of these works of the Romans in Spain is the bridge of Alcantara, built by Trajan. It consists of six arches, the two centre with a span of 110 feet: its length is some 670 feet, and 28 feet wide and 240 feet above the level of the river. The work is simple and majestic, and worthy of the emperor of the world. Another even surpassing these is the great aqueduct of Merida, the grandest in the world: ten arches are nearly perfect: thirty-eight shafts remain, some 90 feet high. They are arched in three tiers, and made of brick and granite. This was only one of many Roman aqueducts in Merida: one crosses the Madrid road, of which only three shafts remain.

The ancient city of Segovia is distinguished by its celebrated aqueduct, as much for the elegance of its form and solid construction as its unalterable preservation and constant use, for it has brought the beautiful water to the inhabitants of Segovia for more than 1,800 years, and still brings it. There is no trace in it of mortar or cement.

Of the architectural works of the Spanish Goths, whose rule in Spain fills up the period from the fall of the Roman empire, in 411, to their own fall upon the advent of the Moors in the year 714, three centuries, there are indeed but few remains, at least south of the Asturias and the Basque Provinces, which alone the Moors never conquered, and from which the tide of conquest was in the course of centuries rolled back. It is probable that the Moors, during the long occupation of their extensive Spanish empire, altered or rebuilt the Christian churches, converting them into their mosques; as the Christians afterwards rebuilt or converted most of their mosques into Christian churches, as in the instances of the cathedrals of Valencia, Granada, Seville, and innumerable others (as partially at Cordova), all built upon the spot, and in most instances occupying the exact area of the mosques that they replaced. Some few vestiges of the Spanish Goths previous to the Moorish occupation are still to be traced at the convent of San Roman, built near Toro, in 674, and in the walls of Toledo, 674; but in the Asturias, to the north, where the Moors never penetrated, there are still existing many works of the Spanish Goths, mostly churches. Though I do not believe that the erection of any of them can be traced to the period prior to the occupation of the southern portion of the Peninsula by the Moors, I believe they were all contemporaneous erections with those of the Moors, widely as they differ from them. These works are characterized by the massive circular piers and the round arches, resembling what we understand by our Early Saxon architecture, as well as a prominent feature, the porch, which was indeed a necessity of the inclement climate of that country. The Spaniards, with more discrimination and correctness than ourselves, call this style of architecture Gothic,—"obras de los Godos," works of Goths; whilst that which we are accustomed to call Pointed Gothic, the birth of a latter age (in which style are most of our cathedrals), they term Tedesco, or Tedesque, and Germanico, being derived (in their case at least) from Germany, with which, in the Middle Ages, they had an intimate communication. These "obras de los Godos" are the oldest Christian churches existing in the Peninsula. The best-preserved specimens are on a lofty hill of red sandstone, called la Cuësta de Naranco, the opposite side of a valley to the north of Oviedo, the capital of the Asturias, where there are several.

The architectural monuments of the Moors then come in succession to those of the Romans throughout the large portion of Spain that they conquered and ruled; for although that country was, for above three hundred years, the kingdom of the Spanish Goths (the interval between the rule of the Romans and the advent of the Moors), yet, as I have said, their buildings have been destroyed or replaced by the Moors.

Of the monuments of Moorish architecture still remaining in the Peninsula, we have more ample and detailed accounts than of any,—at least we have of one of them,—the Alhambra,—in the elaborate work of Mr. Owen Jones, which has made that monument familiar to us. But, elegant and beautiful as it is, it was a work of the decadence of the Moorish architecture. It was erected the last, and not until after the fall of the brilliant empire of Cordova, its superior in arts, in science, and in arms, as well as those of Valencia and Seville. Its foundation was, indeed, the result of the fall of this latter kingdom or pachalic.*

From the accounts drawn from both Arabic and Spanish sources, as well as from those traces, faint indeed, but unmistakable, presented by remains like the Mesquita of Cordova and the Giralda, if not the Alcasar of Seville, the Arab architecture had attained a far higher perfection than the Alhambra of Granada would evince. Notwithstanding the mutilations, and, what is worse, the disfiguring additions to the Mesquita of Cordova, it is evidence of the surpassing genius of the Moors. Startling from its novelty, and the inventive powers displayed, it remains one of the most impressive monuments in Europe. It is indeed worthy of a journey to see it;—to form an idea of the effect of its naves and transepts, its intersections of nineteen longitudinal rows of columns, with twenty-nine transverse rows, originally 1,200 columns. The labyrinth of these colonnades over an extent of 2,400 feet is utterly bewildering, as it is unequalled. For myself, I must say that I never was so impressed with any building, on first entrance, as the Moorish mosque of Cordova.

The choir, or whatever that portion of the building was in the time of the Moors, was unfortunately altered by the bishop and against the judgment of the corporation, so late as the time of Charles V., who in this instance reproved what he himself afterwards did at the Alhambra. "You have built here what you, or any one, might have built anywhere else, but you have destroyed what was unique in the world. You have pulled down what was complete, and you have begun what you cannot finish."

The alteration is in the Florid Gothic, in its last and expiring form, in the beginning of Charles V.'s reign. It is not undeserving of admiration in itself, and is less incongruous than might have been expected with that curious monument.

The Giralda of Seville, which serves precisely the same office as the Italian campanile, detached as those are from the cathedral, is so notable an architectural monument of the Moors, that it has become the characteristic symbol of the city of Seville, in the same manner as the ugly embryo tower and antique crane of the Cathedral of Cologne, which is stamped on the Eau de Cologne bottles and other productions of that city. It forms an exquisitely graceful feature, marking the site of the city seen from an immense distance when journeying towards it by the Guadalquivir, and every minute apparently changing its relative position, sometimes in front, to the right, to the left, and at times almost behind, according to the winding of the river. The Giralda was the square minaret of the mosque, which the cathedral has replaced. It was the work of Guever, the Moorish inventor of algebra. Though of noble proportions, it was thought too low by the Spaniards, and a belfry, &c., in all 100 feet, were added to the height. In elegance, in the combination of lightness and massiveness, it surpasses all the European towers,—the tower at Venice, &c., erected in Italy or elsewhere, at that period. The Moors themselves justly attached so much importance to it, that they determined to demolish it upon the fall of the city to St. Ferdinand, but were only prevented by a threat of general massacre. There still exists another tower of the same, or rather larger dimensions, and resembling it in architectural design, by the same architect, Guever, at Marocco, one of the two capitals of Morocco, as I was informed when in Morocco, by Mr. Drummond Hay, the only Englishman who has been permitted to visit the interior of that country. It is unfortunate that there have been no drawings made of them, as it would have furnished us with the true Moorish termination of the Giraldæ, replaced by the Spanish work, but which Mr. Hay, not an architect, described to me as equally beautiful with the rest. I believe it is four gilt balls of diminishing magnitude. The Alcasar of Seville (from an inscription) was erected after the possession of that city by the Spaniards (it is said by Moorish workmen brought from Granada). It has been sadly mutilated, and partially altered; but from what remains I cannot help thinking that in its original state it was of a purer taste than the Alhambra. Its remarkable feature is the extraordinary manner in which its strength and mode of construction are so perfectly concealed that structures requiring great strength and ingenuity, and which, in other architectural styles, would consequently present an appearance of ponderosity,

* One circumstance alone, although it is descending to minutiæ, bespeaks the inferiority of the Alhambra as an architectural monument to the Mesquita of Cordova and the earlier Moorish works. It is that the ornamentation (which is the prominent feature of the style) is of necessity one of lath-and-plaster, which could not be executed in stone. There is the beautiful honeycomb ornament, for instance, which imparts such a charm to the Hall of the Ambassadors, it would be impossible to express in stone. As, also, the essential dependence of this style of ornamentation upon colour, of which a striking illustration may be seen in the archway of the ancient Moorish palace of Bádis, now called the Casa del Carbon, on the Darro, which is as fine as anything in the Alhambra, in fact is identical with the best of it; but, having been whitewashed, it loses more than half its value; whereas the ornamentation of the Mesquita of Cordova, no less charming in taste, is wholly produced in stone cutting, as the beautiful interlaced ribbon ornament, &c.

are here notable for their elegant and airy lightness.

Other works of the Moors, of less extent, and innumerable fragments, standing alone or encased in more recent building (as the Moorish arch), are scattered all over Spain, upon which time will not permit me to dwell; but there is a charming little piece of Moorish architecture at Granada, which I am surprised has been utterly overlooked by our architectural illustrators; and that even Mr. Owen Jones, while he was about the Alhambra, should have missed it. I mean what is now called the Alcaiseria, but was the ancient Zacatin, or shopping street, though the Spaniards have transferred this name to a street of their own erection running at right angles to it. It was actually *the* Zacatin of which the famous old Spanish ballad or cancionero sings, the "Ay de mi Alhama!" It is in the third verse the messenger brings the news of the fall of Alhama:—

"Descavalga de una mula,
Y en un cavallo cavalga,
Por el Zacatin arriba,
Subida se avia al Alhambra,—
Ay de mi! Alhama."

"He quits his mule and mounts his horse,
And through the streets directs his course,
Through the street of Zacatin,
To the Alhambra spurring in,—
Woe is me! Alhama."

It is a little gem of a Burlington Arcade, although not composed of one line only, as this, but of another at right angles, and probably more, for it has been partially destroyed by fire; but enough remains to show one of the most charming specimens of this kind of architectural fabric. I wonder that the French, at least, have not copied it in their numerous arcades, for which it would serve as a beautiful model.

The architectural monuments in Spain in succession to those of the Moors are the Gothic cathedrals (as we should call them, but incorrectly), in which, indeed, Spain is not less rich than this country, or than France. A period of three centuries, from toward the middle of the twelfth century (1150) to the middle of the fifteenth (1450), may be justly called the cathedral-building era of the world; and I think that (of existing cathedrals at least) none will be found that are not included within it. During this period there were, of course, changes of style, from the round arch, and a style (though different) more nearly allied to the Byzantine, to the Pointed, from the Pointed to the far more enriched, and abounding in fantasies and grotesque conceits (as the Flamboyant in France) as it verged to its decline. The middle of this period, about 1300, the early part of the fourteenth century, seems to have been the best, the culminating point. In this country it corresponds with the reign of Edward III. Although all of these cathedrals (commenced at different times during this period) are partially, and should have been wholly, characteristic of the styles of architecture at the respective times of their erection, yet have all of them been so repeatedly added to, changed (or altered, to improve some indeed, and those of the earliest, like Canterbury), so constantly during the whole of the cathedral-building era, that few indeed, or none, present perfect and homogeneous specimens of their respective prevailing styles of the time of erection. This holds good with respect to the Gothic cathedrals of Spain, though, perhaps, to a somewhat less extent.

There are some arrangements in respect to the Spanish Gothic cathedrals which mark them as distinct from the cathedrals of this country, France, or Germany. The great altar is in nearly every instance isolated, the side aisles passing round it, and is placed east of the crucero or transept. The choir (or coro) is on the opposite side of the transept, and is also isolated. Immediately over the crucero, or intersection of the nave and transept, is the cimborio, a compromise between a Gothic octagonal tower and a dome, often of exceeding beauty. The trascoro is the back or outer side of the coro, relieved throughout with chapels. There is generally no gate or opening for entrance to the coro anywhere but by the transept, so that upon entering the western or principal entrance to the cathedral, you have before you the back of the coro, which shuts out of sight the high altar, which for effect would be much better seen upon entering. The rejas, or brass or iron gates and railings which inclose the choirs, altars, and chapel, are of extraordinary and peculiar beauty, and are characteristic of Spanish cathedrals. It was, in the great time, a branch of art of itself; and the rejeros, or ornamental iron-workers, justly figure in the lists of illustrious artists. The most celebrated were Villapando, Dominge de Cespedes, and Anenas of Cuença. Those rejas are of wrought-iron or brass, with forms and figures of the most exquisite designs. Of the Spanish cathedrals, the number of sacristies is a remarkable feature. Besides the principal one for the ordinary service of the church, many of the larger chapels have their own attached. The Spanish cathedrals have also a segrario, or chapel, where the Sacrament is administered and the host kept; often a separate building, like the baptistery was with the Italians. The cathedral has also almost always attached to it the parish church, which sometimes performs the double office of segrario. This of itself, as at Seville, is frequently of imposing dimensions. The retable, the structure which fills the space of the high altar in Spain, is usually of three or four ranges of architecture, one above the other, with columns, entablatures, and other parts ornamented with statues, bas-reliefs, and paintings, the finest works of the school. The cathedrals of Spain have also some distinguishing characteristics amongst themselves in the different provinces. Thus those of Catalonia, for instance, besides the remarkable shortness of the nave and aisles in proportion to the width, giving the church a compressed look, have always the principal entrance, reached by a lofty flight of steps, of circular form, as the cathedrals of Barcelona and Gerona. Of the Spanish Gothic cathedrals some eighty now remain: the collegiate and parish churches may be counted by the thousand.

The finest examples of the purest period of the Gothic will be found in the exquisite cathedral of Leon; in the elegant ones of Palencia, 1321; Oviedo, 1388; the Cathedral, and Sa. Maria del Mar, at Barcelona, 1328; the Cathedral of Taragosa; and the convents of Lupiana, near Guadalajara, 1330, and Guadalupe, 1389. The Transito or Jewish synagogue of Toledo, 1350, is without rival in the world, and presents a matchless *ensemble* of all that Hebrew, and Gothic, and Moorish art could do in juxtaposition.

The finest specimens of stained glass range from 1480 to 1560, and are to be found in the cathedrals of Toledo, Seville, Leon, Burgos, and Barcelona.

The cathedral of Leon, one of the earliest and best specimens of pure Gothic in Spain, of the twelfth century, resembles some of our own of that period; arches nearly in the form of those of Salisbury, but narrower: the trascoro is of alabaster. The cathedrals generally of Catalonia present traces of the style, having been introduced there by the Normans. Tarragona, commenced soon after Leon and Barcelona, one of the finest specimens of the light Gothic, resembling the best specimens of France and England a little later, 1221. The cathedral of Burgos, taken as a whole, interior and exterior, has been considered one of the finest examples of Gothic architecture in the world. It is not surpassed by the cathedrals of France and England, though it has the fault of Spanish cathedrals, of the nave being too blocked up by the coro, and the capella major, or great altar, too encumbered with chapels; making the interior somewhat heavy. Over the crucero, the intersection of the nave and transept, is an octagonal tower or cimborio, of surpassing beauty, and of interest as a rare example of the passage of the Gothic to the Renaissance, which for the most part is decided, presenting scarcely any instances of the mingling of these apparently incompatible styles. There can be no question that it is of much earlier date than that given in our account of the cathedrals,—1560. They told me at the cathedral, that it was a work of the end of the reigns of Ferdinand and Isabella: it is certainly not later than the earliest part of the sixteenth century.

The western façade of Burgos cathedral, surmounted by its two pyramidal spires of open tracery, 1442, is of great celebrity.

But as for the interior, the cathedral of Seville is the finest Gothic construction in Spain, or in the world. It is one of the later cathedrals—date 1400,—which renders it the more singular that its author should be utterly unknown. It is a favourite theme with the Spanish pseudo-poets to address lines to the mystic hands that raised this solemn fane, upon which they look with an awe somewhat akin to that of the wanderers in the desert on the mighty remains of Persepolis or Balbec. This magnificent structure has five naves, of nearly equal breadth. The form approaches a square, the breadth being very great in proportion to the length, and the side aisles are all equal, and nearly of the same height as the centre. The capitals of the columns are of the same elevation throughout, and the piers of similar dimensions to each other. It has thus that element of symmetry which is characteristic of Grecian architecture, and in which the Gothic is generally considered as wanting. From this plan, and the great solidity of the piers, the exterior is wholly without the connecting arches and buttresses, which, in most of our cathedrals, support the inner parts of the fabric, and supply the want of internal strength. The trascoro has a beautiful and costly architectural front of red marble of Moron. It is, however, out of keeping with the architecture of the cathedral.

With the exception of the great western porch, which is fine, and in keeping, the exterior of the cathedral is singularly unfortunate. It is an inextricable jumble of forms, which can scarcely be referred to any style, or it includes all styles,—the beautiful tower of the Giralda representing the Moorish,—and is the more remarkable as the accompaniment of the finest interior in existence. I should mention, that, in the clerestory, there are the most brilliant and finest specimens of painted glass, admirable in itself and its mode of introduction, adding greatly to the marvellous effect of this matchless cathedral.

There are few works remaining in Spain of civil and domestic architecture of the same period as her Gothic cathedrals: in ours there are none. The only ones that occur to me are fragments (of deep interest, indeed, to the architect) of porches or doorways, and sometimes a portion of the façade of the houses of the ancient Spanish nobility (the Ricos Hombres), which may be seen at Toledo, and are indeed in singular contrast with the houses of the Valencian nobles, built in the decline of the art, as I shall have occasion to mention.*

AMERICAN IRON BRIDGES.

INSTITUTION OF CIVIL ENGINEERS.

ON MAY 5, Mr. Hawkshaw, president, in the chair, the paper read was on "American Iron Bridges," by Mr. Zerah Colburn. The great number of timber bridges in America might be accounted for, the writer said, from the fact, that the first cost of the truss, or superstructure, of a timber bridge of any given span, was generally less than one-half that of an iron bridge of the same strength. Iron had been occasionally employed since 1835, but only within the last ten or twelve years to any extent.

Cast-iron tubular arches, including one of 80 feet span, were erected from the design of Major Delafield, about the time when similar arches were adopted, by the late M. Polonceau, in the construction of the Pont du Carrousel, over the Seine. Major Delafield's arched ribs were elliptical in section, the transverse vertical axis being about four times the length of the conjugate axis. In 1858, an aqueduct bridge was erected at Washington, by Captain Meigs, in which the two arched ribs were formed of water-pipes, through which the water flowed. The span of this bridge was 200 feet, the rise being 20 feet. The pipes were circular in section, 4 feet in diameter inside, and 1¼ inch thick. This bridge was 28 feet wide over all, and the roadway was of timber, supported on wrought-iron spandrils. The bridge was tested with the arched ribs filled with water, and with a load of 125 lb. per square foot upon the roadway, making the total weight on each rib about 350 tons. The thrust of one-half of this weight upon each abutment would be about 470 tons, corresponding to a strain of 2 tons per square inch of sectional area of iron in the pipes. This strain did not include the pressure of the water in the pipes, which were proved to 300 lb. per square inch. These examples were, so far as the author was aware, the only iron arches yet completed in the United States; and with the exception of a few pivot bridges, and one or two ornamental bridges in the Central Park at New York, they comprised nearly all the cast-iron bridges in that country.

There were a small number of plate, or boiler iron bridges. The first was erected in 1847, in place of a timber bridge, by Mr. Millholland, on the Baltimore and Susquehanna (now the Northern Central) Railroad. This was 50 feet span, and the two girders were each 6 feet deep, the two sides of each being formed of plates ¼ inch thick. Between the sides at the top a timber 12 inches square was bolted as a compression member, and the top was further strengthened by two wrought-iron bars, 5 inches deep by ¾ inch thick, while four similar bars were riveted along the bottom of each girder. The sides were stiffened by stay-bolts, enclosed in cast-iron distance pieces, 12 inches apart from centre to centre. The centre of each girder was placed exactly

* To be continued.

under the rails, which were spiked to the timber forming the compression member. The breaking strain of the pair of girders was equal to 250 tons of distributed load, and the weight of the bridge was 14 tons. When completed, this bridge was coupled at each end to a railway waggon; and was slung by chains to a temporary timber truss. It was then taken 19 miles by railway, run exactly over the place it was intended to occupy, the existing timber bridge was cut away, and the girder bridge lowered with the permanent way ready for traffic, the whole operation not having caused an interruption of more than two hours.

Having been long accustomed to trussed timber bridges, American engineers, in adopting iron, naturally employed it in trusses also. But, before describing the various forms of iron truss-bridges, the strength of American iron was referred to. It appeared, from a vast number of experiments made by the United States Ordnance Board, that there was but little iron in any American cast guns of a less tensile strength than 11 tons per square inch; and in 1851, the author had himself seen portions cut from 11-inch guns, weighing 6 tons 15 cwt., tested up to 16·14 tons. The transverse breaking strength of a large number of samples of re-melted iron, when reduced to the English standard of a bar 2 inches deep and 1 inch wide, resting on supports 3 feet apart, varied from 27¾ cwt. to 48·1 cwt., the general strength being 34 cwt. The minimum crushing strength of the irons experimented upon was 37¾ tons, and the maximum 77¾ tons. Experiments made by the Franklin Institute twenty-five years ago, showed the mean tensile strength of cast iron at the first smelting to be 9½ tons; and the iron now employed by engineers in Philadelphia bore from 7·14 tons to 10 2 tons. In 1858, Mr. Albert Fink tested the iron used in the construction of a large bridge on the Louisville and Nashville Railroad. When the results were reduced to bars 2 inches deep by 1 inch wide, on supports 3 feet apart, the minimum breaking weight was 29¼ cwt., mean 32·68 cwt., maximum 39 cwt. This iron was a mixture of two-fifths cold blast, two-fifths hot blast, and one-fifth scrap. With regard to wrought iron, the experiments made by the United States Board of Ordnance gave a tensile strength varying from 17 tons to 33 3 tons per square inch; and those of the Franklin Institute a mean strength of 26 tons for plate iron. At the present time 27 tons was generally expected of American boiler plate. Other experiments were also quoted to the same effect; and it was remarked that, from what had been stated, American engineers might work up to rather higher strains than were commonly allowed in this country. The high qualities of the best American iron were due to the purity of the ore and of the fuel employed in the manufacture. In bridges of less than 150 feet span, even when loaded with a weight of 1·34 ton per lineal foot of single line, the strains did not exceed 3 57 tons per square inch on wrought iron in tension, and 4·46 tons per square inch on cast iron in compression.

Of the iron truss-bridges that were described, all had certain peculiarities in common, distinguishing them from the trussed structures adopted in this country. In almost every case the compression members of American iron trussed bridges were of cast-iron cylindrical or octagonal pipes. These simply abutted, end to end, against each other; and although means were employed to prevent lateral motions of the ends, flanges and bolts were never introduced for that purpose. Another, and one of the most important peculiarities, was the depth of truss, a depth exceeding that employed by English engineers, except in rare instances, as at Chepstow and at Londonderry. American engineers considered a depth of one-eighth for spans of 200 feet as only moderate: for shorter spans depths of one-seventh and one-sixth were common; and in the case of one bridge of 120 feet clear span, the depth was 23 feet, or nearly one-fifth of the span. It should, however, be observed that, in some of the American trusses, the arrangement of the tension members was such that, if the depth of the truss were not considerable, the diagonals would be inclined at hardly more than 8° or 10° from the horizontal; in which case a very large quantity of material would be employed, in proportion to the supporting power obtained. No American iron or timber bridges were ballasted; nor had they any floor, only a foot-path of planks. In bridges having the rails at or above the level of the top chords, known in the States as "deck bridges," parapets were seldom employed; and the trusses were often so short a distance apart, that a passenger, on looking out of a carriage window, was unable to discover any support beneath the train. In no bridges of two or more spans were the trusses made continuous over a pier; each span being always treated as a bridge by itself.

One of the earliest iron trusses adopted in the States was a trellis, known as Rider's Bridge. Cast-iron T, or angle irons, were employed in compression, and wrought-iron bars in tension. These bridges were so slightly proportioned that they occasionally broke down, and the author was not aware that the plan was now adopted in new structures.

A detailed description was then given of a Murphy-Whipple bridge, having a span of 125 feet, with the railway supported on the lower chords. It was for a double line, and there were three trusses, 14 feet apart, from centre to centre, the strength of the middle one being about one-half greater than that of either of the others. The trusses were 23 feet deep, or 0·184 of the span. The top chord was formed of cylindrical cast-iron pipes, and the bottom chord of a chain of square bars, 10 feet 5 inches in length between the centres of the eyes. Upright cast-iron posts, placed at the same distances apart, divided the truss into panels; and as the posts were in two lengths, they were each trussed by four round rods, to prevent lateral failure. The diagonals were in pairs of square rods, and were formed also as eye-bars, grasping pins 2½ inches diameter in the top chord, where the pipes abutted upon each other, and pins 3½ inches diameter in the bottom chord, thus connecting the links, or bars, of which it was composed. The diagonal tension bars only crossed each other in two panels on each side of the centre of the truss. The top and bottom chords were placed horizontally, with transverse and diagonal bars. The railway bars were supported upon longitudinal timbers, which rested upon transverse wrought-iron rolled beams. The total weight of the superstructure complete was 102½ tons, or 8 cwt. per foot of single line. With an additional distributed load of 3,000 lb. per lineal foot on each line, the tensile strain at the middle tension rods would be 4·27 tons per square inch in the middle truss, and 3·12 tons per square inch in the outer trusses; but, with a train on a single line only, the ordinary working strains did not exceed 2½ tons per square inch in tension, nor 3 tons in compression.

In 1861, an iron bridge was erected on the line of the Pennsylvania Central Railroad, across the Schuylkill at Philadelphia. It had two clear spans of 192 feet each, and one pivot span, or turning bridge, 192 feet long. The construction was similar to that just described, but the truss was only 19 feet deep. The upright posts, or struts, were of wrought-iron, so rolled that when two bars were put together they formed an octagonal tube. The top and bottom chords of the turning bridge were of wrought-iron rolled beams, so that either might resist extension or compression. The three spans for a single line contained an average of 5 cwt. of wrought-iron, and 7½ cwt. of cast-iron per lineal foot. The nett cost of the bridge, exclusive of masonry, was 8,144*l.* 10s., or 14*l.* 4s. per lineal foot; the wrought-iron costing 22*l.* 15s. 6d., and the cast-iron 6*l.* 11s. 3d. per ton.

The pivot was of a kind extensively employed for turn-tables. It consisted of a fixed and of a moveable cast-iron disc, both grooved to receive a number of steel rollers, each turned to the frustra of a double cone. A circular railway was laid around the pivot, but the wheels only bore upon it, when the bridge was not truly balanced on the rollers. With a load of 14 tons balanced upon one of these bearings, the whole was revolved by a weight of 3½ lb. hung over a pulley, and connected by a cord to the periphery of the turn-table.

The form of truss introduced by Mr. Wendel Bollman was next noticed. In it the load upon each panel was transferred directly to the ends of the truss, through a pair of straight suspension bars, doing duty only in that panel. With the exception of one pair of suspension bars, supporting the centre of the bridge, the bars in each pair were of unequal length, and their lower ends were attached to the upper extremity of a compensating link, in order to allow for contraction and expansion. This bridge could not alter its form under unequal loading. A bridge upon this plan at Harper's Ferry, on the Baltimore and Ohio Railroad, has four parallel trusses for a double line, and a clear span of 124 feet. The span was divided into eight panels, and the depth of the truss was 17 feet 6 inches. The top chords were each formed of a single line of octagonal cast-iron pipes, and the vertical posts were also of cast-iron. The strains upon the various parts of the truss, caused by the weight of the bridge and of a load of 1½ ton per lineal foot, were 2·8 tons per square inch in compression in the top chord, and varied from 4·46 tons per square inch in tension in the longer suspension bars to 7·14 tons in the shorter bars. Mr. Bollman had stated, that this bridge was tested with a moving weight of 122 tons of locomotives on one span of single line, or nearly 1 ton per lineal foot, and that the deflection at a speed of 8 miles an hour was 1⅜ inch at the centre.

The iron bridge designed by Mr. Albert Fink had been more extensively adopted than any other on the railways of the United States. In this bridge a pair of diagonal tension bars connected the foot of the principal strut or king-post in each truss, with the ends of the top chord. This pair of diagonal bars supported one half of the whole weight of the truss and its load. Each half span was subdivided by a strut, and two diagonal tension bars extended, one to the nearest end of the top chord, and the other to the top of the centre post. Each quarter span was again subdivided into eighths, and these again, for spans greater than 100 feet, into sixteenths. Under the direction of Mr. B. H. Latrobe, then engineer of the Baltimore and Ohio Railroad, in 1852 Mr. Fink erected an iron bridge of three spans, each of 205 feet, where that line crossed the Monongahela river. The depth of the truss was about one-ninth of the span, and the railway was carried at a little above the level of the bottom of the truss. The weight of the bridge, including the permanent way, was only half a ton per foot of single line, and with an additional load of one ton per lineal foot, the tensile strains upon the wrought iron did not exceed 0·15 tons per square inch, and the compression on the cast iron 4 25 tons. The Green River and the Barren River Bridges were then alluded to as being nearly identical in construction to that last described.

The Bollman and the Fink trusses for a single line, and in spans of from 160 feet to 200 feet, cost 14*l.* per lineal foot, or nearly 28*l.* per ton; while timber bridges of the same span only cost from 5*l.* to 7*l.* per foot. Still, iron bridges now met with an amount of favour which appeared certain to insure their ultimate substitution for timber bridges. A gradual preference was being shown to the plate girder, as the great annual change of temperature, from 20 deg. below zero to a reflected heat of 130 deg. in the summer sun, was not favourable to the use of cast iron in structures of such importance as railway bridges.

NEWSPAPER STEREOTYPING.

FEW persons would suppose, remembering the rapidity with which a daily paper is composed and printed, that the "forms" could be stereotyped. Yet, so it is, and for the sake of that very rapidity. The *Engineer* gives some particulars of the mode pursued in respect of the *Times*. The pages are set up with types in the ordinary manner, and from these a *paper* matrix is obtained by pressure. The paper intended to receive the indentation or intaglio of these forms is prepared as follows:—Beginning with a sheet of very thin and fine but strong paper, known variously as bank-post or silver tissue, a sheet of brown paper and two or more sheets of blotting paper are successively pasted one over the other upon one side of the tissue. The opposite or face side of the tissue is dusted with powdered French chalk. The form of type is first warmed in a steam oven; and then, when taken out and laid flat, the plastic paper web, prepared for impression, and still damp with paste, is placed upon it and the whole passed beneath a weighted roller. The impression is as perfect as if it had been made in the finest wax. The paper comes from the types without the least wrinkle and without cutting or tearing at the edges of any one of the thousands of impressions with which it is covered. The sheet, too, is nearly dried and is ready for the moulding frame. As it is not so stiff but that it may be readily bent, the paper is now made to assume the curve corresponding to the cylinders, 64 inches in diameter, of the Applegath presses and those made upon Hoe's plan by Mr. Whitworth. The paper mould is held between an iron back and a block of fire-clay, curved upon its face, and in this position the type metal may be poured and a stereotype plate produced in a few seconds, and perfect, with the exception of trimming the edges and planing the back, which operations are accomplished in a few minutes more. The paper mould is not burnt by the contact of the melted type metal, which fuses at a comparatively low temperature. A slight discoloration and the least smell of burning are the extent of the injury

to the mould, which, indeed, is good for a dozen or more casts, and may then be filed, if required, and preserved for years to be again cast from at any time. The sixteen pages of the *Times*, including its double supplement, are thus stereotyped between four o'clock and 4·40 every morning, the average time of making and finishing each plate being two minutes and a-half. Instead of printing off a whole edition from a single form of type, as many like impressions may be obtained at one and the same time as there are presses for the work.

THE PUGIN MEMORIAL.

THE Pugin Memorial Committee have signified their intention of placing the sum of 1,000*l.*, collected by them, at the disposal of the Institute of Architects, in trust, for the establishment of a students' travelling fund, under certain conditions.

THE BIRMINGHAM SEWAGE QUESTION.

AT a quarterly meeting of the Town Council, a petition to Parliament, praying for power to dispose of the sewage of the borough in such a manner as to relieve the corporation of difficulties, was submitted to the council for approval. Mr. Walker, in moving that the seal of the corporation be attached to the petition, and that it be sent to Mr. Scholefield, M.P., for presentation, remarked that not only was a very large quantity of sewage of great value entirely wasted under the present system, but it was a great nuisance, and endangered the lives of the people. A large sum of money had been expended on the works at the outlet; but without additional powers from Parliament the manure could not be conveyed to the farmers, who were willing to pay a good price for it. Mr. Wiggin moved, as an amendment,—"That the Public Works Committee be authorised and instructed to apply a quantity not exceeding five acres of the land belonging to the corporation, at the outlet of the main sewers at Saltley, in such manner as in their judgment will most satisfactorily demonstrate the agricultural value of the liquid sewage, which flows over the weirs of the subsiding tanks into the Tame, in the production of root, grass, and such other crops as they may think fit to select; and for that purpose that the committee be empowered to lay out such land in a proper manner for irrigation by such liquid sewage, and make use of such quantities thereof for the purposes of such irrigation as they may think fit, and report to the council thereon." The petition, however, was finally approved of.

The Public Works Committee recommended that the Finance, Rate, and Appeal Committee be authorised and instructed to negotiate for a loan of 30,000*l.*, under the "Birmingham Improvement Act, 1861:" 26,000*l.* of this money it was proposed to expend on sewage contracts, repairs, and other works already ordered; and the remainder would be partly expended in the construction of tramway and carriage-drive, and the remainder—should there be any left—in paving those footpaths in the town where the owners of property were willing to bear half the expense. The report continued;—"The attention of your committee continues to be anxiously directed to the operation of the sewage works at the outlet. Further arrangements, however, are required, in order to make the works as perfect as possible. Among other things, it may be observed that the rapid accumulation of the intercepted matter removed from the subsiding pits renders it necessary that the construction of shedding for drying it, and a siding from the Midland Railway to the works, should be immediately commenced, upon which to remove it with greater rapidity, and at the same time to afford to the landowners and occupiers in the vicinity of the railway greater facilities for availing themselves of this valuable manure; and your committee propose to have the works completed immediately the council has authorised the raising the loan previously referred to."

Alderman J. H. Cutler urged the Council not to proceed with so many miles of sewerage until they saw what the Government intended to do to help them out of the dilemma into which they had got them.—Mr. Wiggin said it had become absolutely necessary that the sewerage should be proceeded with. The Council were now depositing ninety tons of solid matter into the sewers per day, and there was no means of getting rid of it.—Mr. Cornforth remarked that the economy of this country in the matter of sewage was very defective. In China there was a different and a better system, and the Americans were improving. In Paris, matter was not thrown from the water-closets into the sewers, but was put into ingeniously constructed tubs, (?) from which it was removed forthwith to the farmer, who paid ready cash for it. He read a paragraph from a report of the Registrar-General of Births and Deaths, in which it was remarked that fevers were now being propagated by the air and water proceeding from the excrement deposited in sewers and cesspools in large cities, and that those ravages would be reduced effectively if that matter was used in cultivating soil, which was so much needed.—The motion for negotiating the loan was put and carried.

The Public Works Committee recommended that, in consideration of the very efficient manner in which the Borough Surveyor discharged the important duties of his office, and of the increased responsibility and labour of these duties with great satisfaction, his salary be increased from 400*l.* to 500*l.* per annum. This motion also was ultimately agreed to.

WALLASEY WATER WORKS, CHESHIRE.

AT a monthly meeting of the Local Board of Health, Wallasey, the Chairman of the Water and Gas Committee reported that the well for the supply of the district with water had been finished, and was a complete success. This well has been sunk under peculiar circumstances, on the margin of the Great Float. Wallasey Pool occupied the site of a valley line trending inland on the Cheshire shore of the river Mersey. There is little doubt but that in some former geological period, a river course had scoured the channel of the Wallasey Pool down to the rock, just as the bed of the river Mersey, opposite the Seacombe shore, is now, at this present day, bared to the rock, by the strong scour of the tides. Progressive changes have allowed of the bed of the former Wallasey Pool silting up until, at this present, there is a thickness of marl, in some parts, upwards of a hundred feet in vertical depth. This marl rests on a bed of sand, which sand rests on the new red sandstone rock. The several borings show that the sand is not an even parallel bed, but that it probably resembles the sand hills and sand banks forming the shores and estuary of the river Mersey at this day,—a series of sand hills, plains, mounds, and banks, submerged and covered by silt and strong marl, containing many erratic blocks, boulders of limestone, whinstone, and granite. The red-sandstone rock is full of fresh water of singular purity, enclosed by the vast covering of marl named. At several points in the parish of Wallasey there are springs: one, well known, issues in the shore at New Brighton, opposite the Black Rock Battery, betwixt high and low water line, each tide covering it. But, nevertheless, the water of the spring, when the salt water of the sea leaves it, issues bright, fresh, and soft. The well, now finished, was commenced by Mr. Rawlinson, C.E., to reach the rock, and tap this vast reservoir of pure water. A portion of land, situate on the margin of the Great Float, (Wallasey Pool) was selected, being "waste land," and claimed by the Local Board, on which to place Gas Works and Water Works. A well was commenced, and had to be abandoned because the ground had been so broken by pumping quicksand, that the engineer did not deem it safe further to tamper with it.

The site of the well is some 20 feet above high-water level of the sea; and now that a well has been completed, the fresh water rises to some 16 feet above the level of the sea. The quicksand and rock have been reached at a depth of 94 feet from the surface, so that there is a pressure of water from beneath the marl covering nearly equal to a head of 80 feet, or approaching 40lb. pressure on the square inch. When the first well had been formed through the marl, 80 feet thick, to the quicksand, the rush of water was so powerful that a solution of silt and sand alone could be pumped.

The second well has been sunk by Mr. Tilly, of Enfield, using 7-feet cast-iron cylinders. The cylinders have been sunk down to the rock, with the water in the well, *without pumping*. An inner cylinder, with a strong cast-iron bottom, having a socket 2 feet diameter, was lowered to the bottom, and the joint made good by a diver working under 80 feet head of water. Boring tools were then worked through the 2-feet socket-hole, and a lining or guide-tube driven tight into the true rock, 10 feet deep, so as to shut out the solution of silt and sand. The boring into the true rock has been continued to a depth of 150 feet from the bottom of the cast-iron cylinders, or 250 feet from the surface. The water now rises up the bore-pipe soft, pure, and sparkling, of 5½ deg. of hardness only, and may be pumped at a rate of 500,000 gallons per day with the existing pumps. The yield of the well is, however, above 1,000,000 gallons of water per day. The boring tools have opened up a natural fissure in the rock of unknown capacity and depth.

Few wells have been executed under greater natural difficulties than this at Wallasey. Many predictions stated that it never would be completed; and even the week before its completion, the report was current in the district that the engineer had determined to abandon it.

COMPETITIONS.

Borrap Estate, Ripon.—In answer to advertisements in the *Builder*, thirteen designs were submitted by architects for laying out the above estate for building purposes. The design of Mr. T. C. Sorby has been accepted as suited to the requirements of the locality.

Monaghan Lunatic Asylum.—Sir: My attention having been called to a letter in your publication of the 2nd inst., signed "Alpha," on the subject of the competition for plans for the new lunatic asylum about to be erected for the counties of Monaghan and Cavan, I beg your insertion of a few words in reply to the concluding paragraph, for the information of the writer, and of such architects as may have had doubts on the subject. The committee propose to pay to the architect who may be employed to carry out the works the *usual commission*; but they wish it remembered that, according to the terms of their advertisement, if the designer of the plan approved of be so employed, no premium will be paid to him.

HARRY ROGERS, Secretary to Committee.

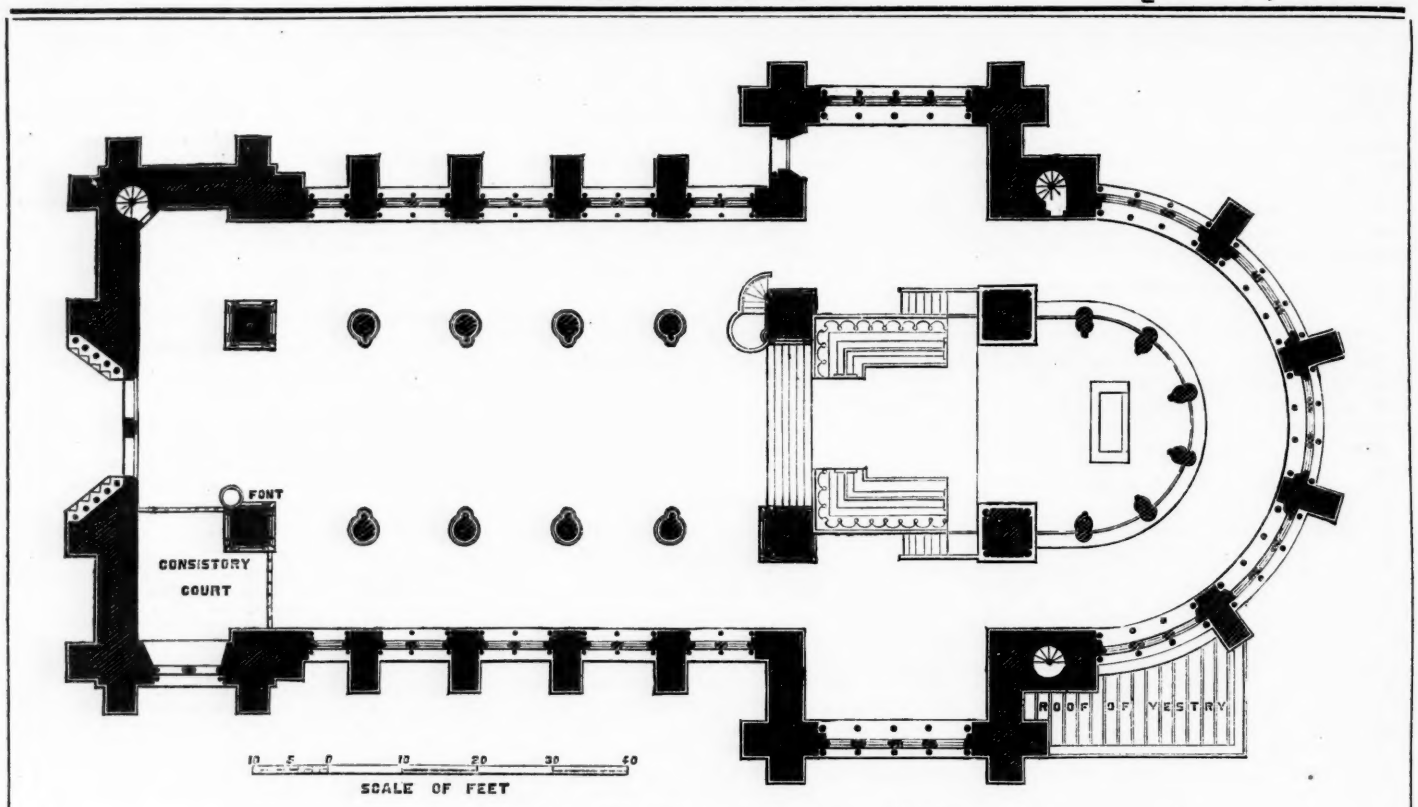
ELECTRO-TELEGRAPHIC PROGRESS.

TWO projects, it is said, are in the field for connecting Australia with Java. It is proposed to lay the cable on the north-west of Australia, on the shores of the Gulf of Carpentaria, or to take it round to Brisbane, the capital of Queensland. At this point the cable would be in communication with the existing intercolonial lines, and New South Wales, Victoria, and South Australia would thus be brought into connexion with the countries of the old world. The cost of laying the line from Java to Queensland is estimated at 1,100,000*l.*; but from Java to the north-west a cable could be laid for 243,000*l.*

The *Moniteur* publishes the following notification: "An international conference has just been opened in Paris, at the Ministry of Foreign Affairs, for the purpose of examining a project for a telegraphic line intended to connect Europe with the American continent. It is proposed that the submarine cable shall cross the ocean from the Cape Verd Islands to Brazil, and be continued thence by the West India Islands to North America. The powers most immediately interested in the success of this undertaking have promptly given in their adhesion to the views of the Emperor's Government."

The following account of an extraordinary French telegraphic invention is given by the Paris correspondent of the *Star*: "The Abbé Cassell's pantelegraph is taken up by the Government. A 'project of a law' was recently presented to the Corps Législatif, which proposes that it should supersede the Morse apparatus now in universal use. The pantelegraph is one of the greatest scientific wonders of the present day. It is properly enough termed here an autograph and automateur. A despatch written at Paris is reproduced without the assistance of any clerk at Marseilles with the most rigorous fidelity, as is also a portrait, sketch, or drawing of any kind. Nor does the Casselli apparatus need so great a supply of electricity as that of Morse, and is much less affected by the condition of the atmosphere. The Empress has lately had her likeness telegraphed to some of her friends in the provinces; and, last week, Casselli telegraphed a painting of a full-blown rose from the Observatory to the bureau of the telegraphic administration. The petals were of a beatiful pink colour, and the leaves of an equally good green; in short, were exactly like the tints of the original. Rossini, also, not many days ago, telegraphed to Marseilles, by this apparatus, a melody which he improvised in honour of the inventor, and which has since gone the rounds of the Paris saloons."

This account almost savours of the alleged wonders of the spirit-rappers, with their "spirit-flowers" and "spirit photographs," rather than of the actual workings of electric telegraphs. Instead of "wonders" ever "ceasing," they are ever increasing, in this age of wonders.



CATHEDRAL OF ST. FINN BARR, CORK.—*Plan.*

PROPOSED CATHEDRAL OF ST. FINN BARR, CORK.

OUR readers will remember that in a recent competition with reference to the proposed new cathedral in Cork, a design by Mr. Burges was selected. We have engraved an interior view of the design, and shall make the architect's proposition best understood by printing the pith of the remarks he submitted with it to the committee.

The sum placed at the disposal of the designer being comparatively small, when viewed in relation with the object to be attained, viz., the construction of a cathedral; he thought it desirable to ascertain, in the first place, what are the most essential differences between a cathedral and a large parish church; which latter, in the present instance, would be out of place; inasmuch as the proposed building is to receive a bishop, dean, and chapter.

If we examine any number of old cathedrals, we shall find that, however much they may differ among themselves as regards size and ornament, they, for the most part, present us with transepts, with the triple division of arcade, triforium, and clerestory, and with more than one tower. It is very true that these towers may not always be built, but the preparation for them is generally to be discovered.

In applying these characteristics to the present building, some considerable difficulty occurred, both on account of the limited nature of the site and still more on account of the small sum to be expended.

A short and simple plan was therefore adopted, consisting of nave, aisles, and transepts, together with an apsidal choir and ambulatory; the advantage of the latter arrangement being, that it causes the shortness of the building to be less apparent, while, at the same time, it affords additional accommodation in case of need.

The plan being thus restricted, but at the same time possessing the distinctive features of a cathedral, the next object was to obtain as much dignity as possible consistent with the outlay. This he thought to effect by making the architecture exceedingly plain and simple, and, at the same time, finishing the walls, which possess the requisite divisions of arcade, triforium, and clerestory, with a boarded wooden roof. Stone quadripartite groining would be out of the question, both on account of its cost and of the diminution in height in the interior, for it requires a wooden roof over it to protect it from the weather, and thereby causes the loss of height. It is generally objected to open wooden roofs, that, unless made of very thick materials and double boarded, they are apt to render the building very hot in summer and very cold in winter. This, in the design, is avoided by boarding to the inner line of the timbers, and thereby obtaining a ventilating chamber between the interior and exterior of the building.

The aisles are shown as vaulted, with a barrel stone roof; but the span is very small and the roof above very slight. However, it would be quite possible to use timber alone, if the funds required it.

From the position of the proposed building, on the top of a hill, where it would be seen from the whole town, it becomes a matter of necessity to have three spires, as well as to carry off the height and shortness of the building itself. Of course it it would be impossible to execute these and the church for the 15,000*l.*; and they must, therefore, necessarily be left to the piety of future generations; at the same time, two or more low towers would only impoverish the building, without any corresponding effect.

A vestry has been provided on the southern side of the ambulatory, and a chapter-house under the south tower. The figures on the jambs of the west door represent the five wise and five foolish virgins: on the tympan is the general resurrection; above, at the angles of the rose-window, the four evangelical symbols; and in the great gable, our Blessed Saviour. These are the only sculptured figures in the building. The principal material proposed to be employed is the red local stone for the mass of the walls; the doorways being hard Bath stone, except in the case of the central tower piers, which, on account of the weight, would require to be executed in Portland or some other hard stone.

In conclusion, the author considered that the body of the church could be executed for 15,000*l.*, and acted upon the principle that it would be better to wait for the towers, than, by attempting too much, to erect a building which would be unworthy of the position occupied in Cork by the Established Church.

THE ARCHITECTURAL ASSOCIATION.

THE annual special business meeting of the members of this Association was held on Friday, the 1st inst., at the House in Conduit-street. The chair was taken by the president, Mr. Thomas Blashill.

The following gentlemen were, on ballot, elected members of the Association:—Mr. F. H. Fowler, 32, Fleet-street; Mr. C. Browne, 18, Spencer-street, Canonbury; Mr. C. Hatfield, 49, Cambridge-street, Pimlico; Mr. J. T. Nightengale, 5, Marlborough-terrace, Kennington; and Mr. B. B. Perress, Anderson-street, Chelsea.

A letter was read from the hon. sec. of the Architectural Alliance, requesting that the names of the gentlemen who might be deputed to act as delegates from the Association at the annual meeting to be held in London in July might be forwarded by the 29th inst.

A brief discussion ensued, with reference more particularly to the position of the delegates with respect to one of the principal questions to be discussed at the approaching meeting of the Alliance; namely, the propriety of adopting a scale of professional charges, in the course of which the president and Mr. T. Roger Smith said that the delegates would not have any power to pledge the Association to any proposition that might be made on the subject, and that the understanding was that each association forming the Alliance might adopt or reject any scale of charge that might be recommended. Ultimately the question of choosing delegates was referred to the next meeting.

On the motion of Mr. T. R. Smith, certain amendments were made in the rules of the Association, the effect of which was, that in future (except on special occasions otherwise provided for) all questions submitted to general meetings of the Association be decided by a show of hands of those present, and that the use of proxies be not permitted. In the election of officers, however, proxies may be used.

The next question discussed had reference to the best hour for meeting. Mr. Adams proposed that the time should be changed from eight o'clock to half-past seven, contending that the members did not at present attend with sufficient punctuality to admit of the president taking the chair, and that the period usually left for discussion after the paper of the evening had been read, was far too short.

Mr. C. H. F. Lewes supported this view.

Mr. H. A. Reeves, Mr. Paraire, Mr. Wimbridge, and other gentlemen, on the contrary, contended that it would not be prudent to depart from the usual hour for assembling among all scientific, literary, and artistic societies; and that if it were known that in future the chair would be taken at eight o'clock precisely, the attendance of members would be more punctual. It was also urged that an earlier hour for meeting would interfere with the modelling class, which also met on Friday evenings.

Eventually a show of hands was taken, when the motion to substitute half-past seven for eight o'clock was lost, the numbers being,—ayes 20, noes, 21.

Some other matters of a routine character having been disposed of,

Mr. C. J. Adams announced that the next subject for the Class of Design would be a choir or chancel screen; and that at the meeting on the 15th instant, Mr. F. A. Skidmore would read the second part of his paper on Metal Work.

CATHEDRAL OF ST. FINN BARR, CORK.—INTERIOR, LOOKING EAST.

SELECTED DESIGN: BY MR. W. BURGES, ARCHITECT.

ARCHÆOLOGICAL INSTITUTE.

THE official paper in reference to the meeting at Rochester on the 28th of July next says:—

Rochester presents a centre of archæological attraction not only in the cathedral and noble castle, or in minor objects—the remains of the city walls, ancient dwellings of picturesque or historical interest, the remains of the house of the Templars at Strood, and of Gundulph's Hospital at Chatham, but also numerous ancient architectural examples, ecclesiastical, castellated, and domestic, of remarkable interest, advantageously accessible on such an occasion. The following may be particularly mentioned:—The ancient stronghold of the Cobham family at Cowling; Cobham Church, with its fine series of sepulchral brasses; the noble gallery of paintings at Cobham Hall; the supposed remains of Saxon architecture at Dartford Church; the churches of Cliffe, Darenth, Stone, and Farningham; Boxley Abbey; Malling Abbey; Maidstone, with its fine church, museum, and numerous objects in the vicinity; the remarkable examples, moreover, of military architecture—the mote at Ightham; Leeds Castle; Allington Castle; Old Soar; and Knole, with its celebrated assemblage of historical portraits. To those who investigate traces of Roman occupation, the extensive potteries in the Upchurch Marshes, near Rochester, present a subject of interesting inquiry. Amongst remains of a still earlier age may be cited, Kits Coty House, the most curious primeval monument in the south-eastern parts of England; and the fallen cromlech at Addington; the semicircle of stones and chamber at Coldrum. Of these localities many may be included in the scheme of general excursions now in preparation; whilst others, comparatively difficult of access, may be available to parties of the mere keen votaries of archæology. Mr. Roach Smith has, with much kindness, offered his services as a guide, in the event of a special party being formed to visit either Coldrum or the Upchurch Potteries.

The architectural history of the cathedral and conventual buildings has been undertaken by Professor Willis. The grand example of military architecture, Rochester Castle, will present a subject of unusual importance to the Rev. C. H. Hartshorne. The Rev. J. Earle, late A. Sax. Professor, Oxford, will give a dissertation on the archæology of Kentish local names: a memoir on certain examples of painted glass in Kent, has been promised by Mr. Winston; and the subject of sepulchral brasses, of which Kent presents an unequalled series, will be brought before the meeting by Mr. J. G. Waller.

PROTESTANT CHURCH OF MONTPELLIER, COMPETITION.

MORE than one English competitor complains of the treatment received. Letters asking for information, and addressed to the clergyman, have been returned. We have just now learnt accidentally that the award is as follows. Considering that, on the recommendation of Mr. C. Daly, of Paris, we placed the terms of the competition prominently before our readers, we might have expected an official intimation of the result:—

First premium, W. Bouwens, Paris; second, F. Estibot, Lyons; third, Albert Claris, Paris.

Honourable mention: first, A. Gouttès, Montpellier; second, X. P. Arribat, Montpellier; third, André Marcel Bourdillon, Geneva.

CERAMIC DECORATION OF BUILDINGS.

THE suggestion and offer made a few weeks ago by Mr. Beresford Hope, with reference to the Wedgwood Memorial Institute, will be remembered by our readers. The committee have now received donations of the value of 25*l.*, 15*l.*, 10*l.*, and 5*l.* respectively, from that gentleman, Mr. J. E. Heathcote, Mr. J. Edge, and the Rev. Dr. Armstrong, to be offered as prizes to architects or other artists who shall in competition produce the best designs for the ceramic treatment and decoration of the block façade of the Institute, which is to be constructed according to the accepted designs of Mr. G. B. Nichols. This competition has accordingly been resolved upon, not only with the view of enhancing the beauty of the structure itself, but also with the object of creating a systematic interest in ceramic architecture in its artistic and its practical aspects, by directing the attention both of artists and manufacturers to the subject. The committee have appointed Mr. Hope, Mr. M. D. Wyatt, and Mr. J. C. Robinson judges, who have issued the terms of the competition. These may be obtained at No. 9, Conduit-street. The designs are to be sent in by the 2nd of November next.

SCHOOLS OF ART.

The Ipswich School.—The annual distribution of prizes at this institution took place at the School, Northgate-street. The Rev. C. H. Gaye, the chairman of the committee of the school, presided. There was a numerous attendance of ladies and gentlemen. The chairman, in opening the meeting, said he was glad to be able to state that the pupils had this year maintained the credit which they had gained in former years, the number of medals and prizes being about the same as heretofore. Mr. G. C. E. Bacon said the committee were very glad that they were able on this, as on previous occasions, to issue a report of a very satisfactory character. The inspector had reported very favourably of the improvement he had observed in drawing, and spoke highly of the steady progress the boys in the several schools had made, which was owing entirely to the exertions of their master, Mr. Griffiths. Last year there were fourteen medals, and on this occasion only twelve; but the number of prizes, he believed, was greater this year. The authorities of the South Kensington Museum had discovered that they could not be so lavish in the distribution of prizes as heretofore; and the number of prizes having been reduced, it would be more creditable to those who should hereafter obtain them.

The Kidderminster School.—This institution has now been in existence thirteen months, and is gradually working its way in the estimation of the inhabitants. The number of students now is ninety, out of whom twenty-five are designers or those engaged in various designing shops. Pupils of the school continue to be engaged by the designers in the town, and thus another means of obtaining a respectable livelihood has been opened to youths whose talents lie in this direction. Mr. Kennedy, the principal master of the school, has been delivering a lecture "On the True Principles of the Art of Design as applied to Textile Fabrics;" in which he pointed out the bad taste displayed in the naturalistic treatment of flowers, foliage, &c., in designs for carpets, and advocated strongly the use of abstract forms and conventional treatment, geometrical and symmetrical. He also explained the principles of decoration taught in the Government School of Art.

MEMS. FROM HOUSE OF COMMONS.

The Vacant Plot of Ground at Carlton Gardens.—Sir M. Peto said that, as his name had been mentioned in a question put on this subject, he wished to say that he had not preferred this particular site in any way, and that he had gone to the officer of the department to say that he did not require it, and that the disappointed parties were welcome to it at the price which he had paid for it. Sir J. Shelley said his hon. friend had misunderstood the object with which he put the question. In these days, when they were looking everywhere for an eligible site for public offices, he thought that such a site as Carlton-house-rise ought not to be disposed of by private contract, or for any less price than the utmost which the public would give for that purpose. He was glad to hear that his hon. friend, who was a good judge of the value, had given a full price for it; but he believed it would have fetched a larger price had it been generally known to be in the market. He hoped that by putting the question he should not be understood as implying that his hon. friend was in any way to blame. The rent has been stated to be 1,400*l.* per annum for about three-quarters of an acre.

The Exhibition Building.—Lord R. Cecil asked the Chancellor of the Exchequer whether the report was true that the Government had offered or intended to become purchasers of the building in which the Exhibition of 1862 was contained. The Chancellor of the Exchequer said he had been questioned upon the subject a few weeks since, when he gave the best answer he was then able to give. He was not now able to make any further statement upon the subject, but he could assure the noble lord that if the Government should offer or intend to become purchasers of the Exhibition Building they would give the earliest information in their power to the House; and in case they should intend any step requiring a vote of money they would take care to lay an estimate before the House at an early period, and bring the matter under discussion in the manner which might be thought most convenient.

Public Buildings.—Mr. B. Cochrane gave notice that on an early day he should move that, for the sake of obtaining greater unity of design in our public buildings, and with a view to the efficiency and economy of the public service, it is desirable a permanent Commissioner of Public Works and Buildings should be added to the present Board of Works.

SCHOOL-BUILDING NEWS.

Lowestoft.—Contracts have been entered into with Messrs. George Rix & George Parker for the erection of Congregational Sunday school-rooms, from designs and plans prepared by Mr. W. Oldham Chambers, of this town, architect. The building, which will be of an ornamental character, in the Italian style of architecture, with two campaniles, will be in the rear of the present chapel, and front Nelson-street.

Cannock (*Staffordshire*). — New schools at Hednesford, on the summit of one of the highest of the Cannock Chase hills, have been opened. The buildings are of red brick, with bands of white and blue bricks, and include a house for the master. The large room is adapted for service, pending the erection of a church, which it is to be hoped may shortly be erected. The Marquis of Anglesey has given the site of the schools, which forms only part of a grant of five acres from that nobleman, for the erection of a church, parsonage, and schools. The schools have been erected by Mr. Tomlinson, of Cannock, after the designs of Mr. Samuel Johnson, of Wolverhampton, at a cost of 800*l.*

Broadwas (*Worcestershire*).—The new school building just erected in this parish has been opened. It is built on a piece of land nearly opposite to the rectory; and, though plain and unpretending in its architectural features, it will give accommodation sufficient to meet the requirements of the parish. It is in the Gothic style, and is built of party-coloured brick, with Bath stone dressings. The roof is high-pitched, and is covered with black and red Broseley tiles, worked out in design. On the south front there is a small bell turret. The school-room will accommodate fifty scholars of both sexes. The design was furnished by Mr. A. E. Perkins, of Worcester, architect; and the building contract was carried out by Mr. John Ballard, of Martley, builder. The cost is estimated at 370*l.*

CHURCH-BUILDING NEWS.

Frampton (*Lincolnshire*).—The foundation of a new district church in the parish of Frampton, has been laid by Mrs. Tunnard. The site is in a field beside the road leading from the Kirton turnpike to Kirton Holme. The edifice will consist of a nave, chancel, south porch, and a vestry on the north side of the chancel. The external of the walls will be stone, but the internal red bricks. The work is being executed by Mr. White, of Alford, builder. Mr. Fowler, of Louth, is the architect.

Doncaster.—The chancel and new organ at Christ Church have been opened. The architect employed was Mr. Arnold. The chancel is composed of two bays, forming side aisles. The capitals of the columns show considerable foliated work, carved by Mr. Athron. Mexborough stone has been used for the shafts of the columns, and the caps, bases, and arch mouldings are from the quarries at Brodsworth. The arch mouldings of the octagonal columns by which the chancel is divided afford an aisle on either side. The carving of the capitals represents the maple, thorn, and nut leaves; wheat-ears, buttercups, and flowers being also distinguishable in many places. The roof is an open one; and in carrying out the Gothic design, says our authority, the local *Gazette*, Mr. Arnold had great difficulty to get weight, so essential on roofs of that kind, but he overcame it by the addition of a second plate for the springing of the roof, and in this manner bringing down the ends of the rafters to their proper position, finished with a small embattled cornice. The wood is St. Petersburg red deal, stained and varnished. The roof of the former chancel was flat and divided into panels. The seats placed in the chancel are of oak, and cut by Mr. Ruddle, of Peterborough. The new organ was built by Herr Schulze, who made the instrument in the parish church. It is much smaller than the parish church organ. There are 22 sounding stops, 3 manuals, and a pedal key board. The case is of oak, Gothic in design (by Mr. Arnold), made by Mr. Ruddle, of Peterborough. It shows a great variety of ornament. The front

pipes are diapered, the larger ones having different texts of Scripture worked in the designs. The cost of the screen is estimated at 42*l.*: the organ will cost about 300*l.*, independent of the old organ given in exchange, and without the price of the case. The vestry has been enlarged, and its proportions altered: it is now placed against the chancel wall. The floor of the chancel has been paved with Minton's tesselated tiles. The stained-glass windows are from the manufactory of M. J. P. Capronniere, of Brussels. The subject of the new window on the north side of the chancel is "The Annunciation to the Shepherds." The south window represents "The Adoration of the Magi." A rose window has been introduced at the west end, which is opened out by the removal of the organ, and is emblematic of the union of the gospel in Christ. In the centre is the Lamb; and the four medallions springing from that point contain representations of the living creatures mentioned in the Book of Revelations. A small triplet window is placed in the vestry. The two new windows in the chancel were the gift of the late Mrs. Saunders, to the memory of her family. The rose in the west side of the church and the triplet in the vestry are the gifts of M. Capronniere. The expense of the extension of the chancel, the alteration of the vestry, the window, &c., is 800*l.*, exclusive of the gifts of several of the congregation.

Sheffield. — The Broomhill New Connexion Chapel has been opened. It is situate on the Glossop-road, near the Mount. The chapel is of stone, in the Italian style, the portico being at a considerable elevation above the road. Access to the body of the chapel is gained through a double lobby in the centre of the front, and there are separate entrances to the galleries under the same central portico. The chapel is on the ground or principal floor, the space beneath it on the basement being used for a school-room. This is 55 feet by 48 feet, with a height of 13 feet, light being obtained from windows on each side. There are also two class-rooms here, and the formation of the site has permitted the whole of these school premises to be erected above ground. The chapel is of the same size as the school; and adjoining it there are class-room, minister's vestry, and other conveniences. The whole area of the building, 70 feet by 48 feet, is surrounded by galleries, which are consequently extensive. The height of the chapel is 32 feet. There is accommodation for 800 persons, with unusual width of seats and passages. The total cost will be, it is estimated, about 3,800*l.*, exclusive of an organ which is being built by Messrs. Willis, of London. Towards this sum more than 2,000*l.* have been raised. The architects are Messrs. Flockton & Abbott; and the builder, Alderman Mycock. The chapel is warmed by hot air from an apparatus supplied by Messrs. Haden, of Trowbridge.

Aston (*Yorkshire*)—Aston church has been recently restored under the direction of Mr. M. E. Hadfield, architect. In the autumn of last year, the present rector, the Rev. A. R. Campbell, determined upon a general restoration of the church; and this circumstance has led to the uncovering of the Norman arcade which separates the nave from the aisles. It had been covered by a thick coat of plaster. The labels, capitals, and even the shafts had been defaced and disfigured by modern mouldings. In the process of restoration it was discovered that the arches were constructed of different coloured stones, so systematically arranged as to leave no doubt that it had been designedly done to give the grace and force of colour to the otherwise simple mouldings. The stones of the three rims are different in colour and texture. The label is purple gritstone, from the neighbouring village of Wales. The outer chamfer is of red sandstone, from the same place, whilst the inner rim and relieving arches are the rich yellow limestone from Lindrick Common, near Worksop. The shafts are built of each kind of stone as marked on the section. One capital only is of Roche Abbey limestone, with an abacus of Lindrick stone. The church generally partakes of three different styles, but there is nothing particularly worthy of note except the arrangement of coloured bands in the arcade. Care has been taken to preserve this feature of the building—and the capitals, bases, and other details have been restored. No renovation of the old work has been permitted, except washing and scrubbing the surface: the practice of chiselling over the old stone to make it look new has been prohibited. The old altar stone has been discovered and placed in the vestry: the consecration crosses are discernible, though much worn. The roof of the nave, which was of a low and depressed character, has been removed, and a new open roof erected in its place, of framed open timber. The south aisle windows have been filled with tracery, and all the plaster stripped from the walls and roof.

Harewood.—The church here, which was originally built in the twelfth century, and which from time to time has undergone many alterations and changes, has been restored from designs by Mr. Scott, and formally re-opened for divine worship. The designs have been carried out under the superintendence of Mr. Parsons, the estate architect to the Earl of Harewood. The pulpit" and font are in Caen stone, with Lizzard serpentine marble from Cornwall, and were carved by Mr. Farmer, of London. The contractors for the general works were Messrs. Beanland, of Bradford; and a warming apparatus was fixed by Messrs. Nelson & Sons, of Leeds. The thick coating of plaster, which covered the walls to a depth of nearly 2 inches, has been removed, and the arches and pillars made to stand forth in their proportion. The flat plaster ceiling has been replaced by a panelled roof of stained pine. The west gallery has been taken away, and open seats of stained pine, one uniform size, substituted for the old irregular pews. The Rythen and Redmayne monuments have now been inclosed by an open screen of oak. The prayer-desk, lectern, and choir-seats are also of oak. A font of Caen stone, with marble pillars, has been presented by the Countess of Harewood, and a sculptured pulpit of the same material by the Hon. Edwin Lascelles. The chancel inside the communion rails is laid with Minton's encaustic tiles. The cost of this restoration has amounted to about 3,000*l.*, the whole of which, except 500*l.* collected in the parish and neighbourhood, has been provided by the Earl of Harewood.

Appleby.—St. Lawrence Church, at Appleby, has been re-opened, according to the *Carlisle Journal*. It has been closed for restoration during the last eighteen months. The side windows are new throughout, having been restored according to a design furnished by Mr. Cory, of Carlisle, while those in the clerestory have been re-glazed, and the stone renewed, where necessary. The chancel and north chancel aisle have undergone a restoration under the superintendence of Mr. Christian, architect to the Ecclesiastical Commissioners. In addition to a new east window, three new windows have been inserted in the north chancel aisle. The whitewashed ceilings have been removed, both in the north aisle and chancel proper; exposing in each case the oaken beams and timber of a new and lofty open roof. A new chancel arch completes the restoration of the eastern end of the church. An improvement has also been made at the west end of the building, the western tower having been opened out by the removal of the organ-gallery, thus giving the church the whole length from east to west, and exposing to view an arch and the large western window, which has been restored in accordance with a design furnished gratuitously by Mr. Christian. The organ is removed into the north chancel aisle. The whitewash has been cleared from the columns and arches throughout the building, and the stone redressed. The whole of the work has been executed by Messrs. Nelson & Co., of Carlisle. The staining and varnishing of the woodwork was done by Mr. Fauset, of Appleby.

Guernsey.—Morley Wesleyan Chapel was opened for public worship on the 19th April. The following are some of the particulars, abridged from the local *Comet*:—The chapel is in the Gothic style, and constructed of red granite, random masonry. The walls are buttressed; the buttresses pointed with Portland cement, similar to those of St. Paul's Chapel. The length of the chapel, which is in the form of a T, is 42 feet; width, 33 feet; length of transept, 47 feet. The walls are 16 feet in height; from the ridge to the ground, 40 feet. The roof is slated. The chapel is lighted by three windows, of quarried glass, on each side; and a centre and two side lights of the same material above the door in front, and two small slit windows, one on either side of the door, contribute towards the same object. A small centre finial and two steeplets, on the front of the building, are added by way of ornament. The addition of a schoolroom at the eastern end, in accordance with the style of the chapel, will give it a cruciform appearance. Provision has also been made, in the event of the chapel becoming too small, to open the partition wall; and convert the schoolroom into chapel accommodation sufficient for eighty persons additional. The contractor was Mr. P. Gallienne, formerly in the employ of the late Mr. Matthew De Putron, builder, St. Martin's. It is calculated to seat 218 persons,—fifty free. The estimated cost of the chapel was 450*l.*; that of the schoolroom, 175*l.*; total 625*l.*

Battersea.—St. John's Church, Battersea, near the Wandsworth station (Waterloo line) was consecrated by the Lord Bishop of Winchester, on the 5th inst. The church contains accommodation for 635 adults on the ground floor, and 100 children in a western nave gallery, and has been erected, including all extras, for which an architect's certificate is required, for 4*l.* 15*s.* per sitting—allowing 20 inches for each sitting throughout. The church consists of a nave and chancel, 84 feet 6 inches long by 24 feet 6 inches wide, being terminated by a semi-octagonal apse. The north and south aisles are 73 feet long by 17 feet 6 inches wide. The external height of the nave from the ground to the ridge is 44 feet 6 inches; that of the aisles, 35 feet. There is no clerestory. The columns of the arcade are of stone. The octagonal pierced stone pinnacles between the nave and aisles in the west front (one of which is the bell turret) are 65 feet in height. There are griffins carved by Mr. Redfearn at the angles of the base of the broach spires, surmounted by carved finials. The style of the building is Gothic, of the Early Pointed period, adapted to the prevailing taste, with stone dressings and red, black, and grey brick facings. Messrs. Sharpington & Cole were the contractors, who have completed their work ten days before the stipulated time. The chancel fittings were executed by Messrs. Cox & Sons. the illuminated tablets for the decalogue, &c., were by Messrs. Simpson; and the corona, gaseliers, and fittings by Mr. Berry. The carving and stained glass margins were presented by the architect. The cost was about 3,350*l.*

THE BOW BRIDGE, LEICESTER, AND THE TRADITION AS TO KING RICHARD III.

IT is the intention of the corporation to fix on the new Bow Bridge two oblong iron plates, one of which will relate to the erection of the bridge on the site of the old structure of that name, and the other to the legendary account of the death of King Richard III., and the traditional prophecy connected therewith. The plates, which will be made to correspond, will be about 2 feet 6 inches in length, and from 2 feet to 3 feet in breadth. The letters will be raised, and bronzed, and the plates let into one of the piers of stone on either side. The one commemorating the erection of the bridge will have upon it the following inscription:—"This bridge was erected by the corporation of Leicester in the mayoralty of S. Viccars, esq., A.D. 1862, on the site of the ancient Bow Bridge, over which which King Richard III. passed at the head of his army, to the battle of Bosworth Field. August, 1485. Joseph Whetstone, chairman of Highway Committee: S. Stone, Town Clerk: E. S. Stephens, Borough Surveyor." The plate on the opposite side will have upon it the legend in verse, according to Speed's History of Great Britain:—

> "Upon this bridge [as tradition hath
> Delivered] stood a stone of some height,
> Against which, King Richard, as he passed
> Towards Bosworth, by chance struck his spur,
> And against the same stone, as he was brought
> Back, hanging by the horse's side, his head
> Was dashed and broken, as a wise woman
> [Forsooth] had *foretold*, who, before Richard's
> Going to battle, being asked as to his success,
> Said that where his spur struck his head
> Should be broken."

This account is simply handed down as a tradition: and the corporation, in preserving it, are properly enough engaged in taking care that whatever is interesting in connexion with Leicester shall be retained.

PROPOSED TOWN HALL, ALBERT MEMORIAL, &c., FOR EDINBURGH.

THE want of a large and convenient hall for public purposes has long been felt in Edinburgh. Sketches, however, of a design for the improvement of the south side of the High-street, and the erection of a town-hall, were lately prepared by Mr. David Rhind, architect, and have been for some time under consideration. From this design a definite plan has been prepared and engraved by Messrs. W. & A. K. Johnston. The improvements contemplated are of great extent, and are intended, not only to afford ample space in a central position for the town-hall, but to take advantage of the striking natural features of the situation for a grand architectural display. The new town-hall building, it is proposed, should include, besides a hall of 120 feet in length by 80 feet in breadth, other rooms for the meetings of the Merchant Company, the Chamber of Commerce, and other public bodies. Streets are included in the pro-

jected improvements, and these are intended to be wide and handsome, and probably built in the old baronial style already attempted in Cockburn-street. On the north side of one to be called Albert-street, immediately fronting the town-hall, the intention is to erect the Scottish National Memorial to the late Prince Consort, for which between 15,000*l.* and 16,000*l.* have now been raised. The memorial, it is proposed, should take the form of a bronze equestrian statue, with other bronze figures, representing Art and Science. The whole group would occupy a commanding position, and would be seen in grand effect from the whole extent of Princes-street, from the Waverley and North bridges, and from the Mound. Gardens and a terrace are included in the design, and at the southern semicircular boundary of the gardens is the space to be occupied by the statue, to which access will be obtained by four distinct flights of steps. The northern extremity of the whole design is to be occupied by a fountain in East Princes-street Gardens, for which it is understood a legacy has been left in the hands of the Town Council. Messrs. W. & R. Chambers, Messrs. M'Laren, Son, & Co., and others whose property would be bounded on the west by one of the streets to be named St. Giles-street, have indicated their willingness to co-operate heartily in carrying this improvement into execution, if it should meet with the approval of the authorities.

THE VENTILATION OF UNDERGROUND RAILWAYS.

I HAVE frequently travelled on the Metropolitan Railway, and noticed the atmosphere to be particularly unpleasant at Gower-street. At first, the condensers of the engines were said to be insufficient for their purpose: I believe new ones have since been constructed; yet, from recent experience, I fully agree with your remarks in last week's *Builder* upon the imperfect ventilation; and would suggest whether the "sunlight" gas-burner, or some other good draught-creating medium, cannot be introduced at intervals in the *crown* of the tunnel, with a shaft above each to lead away the impure air in convenient directions. The apertures for light and air at Gower-street are below the level of the crown of the arch, and so do not seem greatly to assist the ventilation.

W. H. C.

CONSTRUCTION OF CHURCH ROOFS.

HAVING had for many years, and lately, my attention drawn to the construction of new roofs to ancient edifices, and to proposed new works, I have met with difficulty in treating the question, when the funds at disposal are limited, in anything like the old spirit as to strength and solidity, particularly when the material must of necessity be *fir*.

I find the only solution to the problem is by giving up flush framing altogether where fir is used, or where the oak or chestnut must be of less scantling than the old roofs; and I propose to substitute the system of lap framing, with dovetail joints, to timbers in a state of tension.

It is rarely the case that, even where fir is used, we are able to specify timbers of the ancient scantlings; and this class of timber, being much less durable and weaker, renders the oak mode of construction totally inapplicable; so that, where a rafter of oak 4 by 4 can safely be mortised, it would be imprudent to treat the same section of fir similarly, with, of course, the same view to durability and strength. In the case where the timbers appear and are dressed, I admit great difficulty arises as to how to ornament or mould them, and I am free to admit the unsightliness of the lap system; but where the roof is ceiled to the underside of spars, there is no hinderance to laying the diagonal braces, punchions, and collars against the sides of the rafters, and notching them down slightly with a dovetail joint, and then pinning them. In this case you have, *firstly*, the advantage of a dovetail end, which, to a piece of framing in a state of tension, is a very powerful mode of connexion. *Secondly*, the sections of the spar and brace are very slightly reduced. *Thirdly*, the cost of such a means of construction is much lessened in labour, and (if the above facts are granted) in the amount of timber required.

With a commendable jealousy in preserving the old spirit in the restoration of our ancient edifices, and working in it in our new, the great Church Building Society forbad, some years ago, the use of tiebeams; and, quite recently, their professional committee have put their veto on the above system of construction, entirely on the plea that it is not in accordance with ancient precedent. If my memory serves me, there are no formulæ giving the relative strain necessary to disconnect two or more portions of framing secured by the several modes of connexion. It is a practical question of much service and interest in these days, when economy of construction is so pressed on our attention, and when there is a growing wish to *build* or establish lasting works, but not in blind accordance with ancient examples.

PHILIP BOYCE, Architect.

THE PARKS AND KENSINGTON GARDENS.

THE reference lately made in the *Builder* to the new style of gardening, and in especial to the improvements so notably carried out in the parks and Kensington Gardens, has given much satisfaction to Horticultural professors, and to all amateurs of the English garden. It is most gratifying to witness the advance of floriculture and plantation in places of public resort, where not many years back all was plain, barren, and almost repulsive. When the park and gardens were surrounded by dead walls, they were comparatively deserted: what a difference we now behold! Crowds of admiring promenaders, ladies, families, nurses, children, frequent the tastefully-decorated borders in search of health, and profiting by that enjoyment which a tastefully decked parterre never fails to infuse into the tranquil mind. In point of fact, except in nurseries or floral marts, hitherto there was no example to be found for imitation or study; for the only institution that existed to cultivate public taste in this respect was the Chiswick, or Regent's Park exhibition; and these being open to and accessible by a comparatively small number, a general diffusion of intelligence on the subject was out of the question.

In the improvements so rapidly made it is much to be regretted that the fine timber trees in the Gardens have not received that attention which arborists and private proprietors would have assuredly given to their plantations, whether for effect or for profit. It is deplorable to witness the failing state of the slender, tall, close-grown stems of lofty trees, which, if given a fair interval of space, might yet feather out, and become not only ornamental but vigorous. To-day we see struggling to bud into existence lofty foresters 100 to 150 feet high, dying at the top, exhibiting little more branch than an unthinned pine grove, each starving and whipping its neighbour, through too close proximity! Is there no wood-ranger to arrest this state of decadence and decay? Surely all must know that forest trees cannot arrive at maturity and exhibit a healthy, much less an ornamental growth, at a mean distance of say 12 feet. Entire groves are much closer than that, and many of the trees are 5 or 6 feet only apart. For free growth and natural garniture, each stem should be distant at least half its height from its neighbour.

The thinning of a plantation, while it secures health and grace to the occupants of the grove, also secures to the frequenters of the woods and glades a healthy and genial atmosphere. Having so far touched this subject, I would, with reference to the introduction of fountains and waterworks, observe, that while we give credit to the authorities who have done so much to embellish these gardens, which contribute to the health and solace of great multitudes, there is still a shortcoming, as to effect, in what has been already done, and a great default in design as to what might be effected, if we take into account the means at their disposal, and the great scope and aptitude of the field of their operations.

The four little basins of yellow water, with their abortive fountain squirts, and dimly seen gold fish, are failures. Would they not be better filled in with mould, and transformed into lively knots of planted flowers? Then, again, the hirsute borders of the Serpentine, between the bridge and fountains,—what a happy space they offer for decoration in marginal borders of alternated beds, walks, and knots! Here the most delicate shrubs and flowers would flourish, and lend an odour and grace to grounds and water, which are now certainly pleasing, but which might be made enchanting.

Then there is on the highest plateau of the centre a space of water called the Round Pond, covering eight acres. Here, indeed, is a glorious site for a fountain, in the centre of the glades, palpable from all sides: a jet such as that in the central Serpentine Italian Garden would have a telling effect. The water, too, if forced to this point from the well (Mr. Docwra's), might be conducted back by a pipe, so as to feed and keep in play that fountain also to its full height; but were it possible to obtain a grand fountain, equal to the French fountain, now a derelict in the Horticultural Gardens, the effect would be complete.

Any one, however, who looks at the Round Pond must deplore that so much ground is lost and swamped in so valuable a position: for effect, two acres would be most ample; or the *encircling six acres* might be converted into flower-beds or knots, enriched by appropriate shrubs (not too large growing), so as to form an attraction in this *juste milieu* of the most favoured and valuable of metropolitan pleasure-grounds.*

JOSEPH NEWTON.

BEATING THE BOUNDS.

ST. MARTIN-IN-THE-FIELDS.

SIR,—After reading your remarks on the above, I am induced to trouble you with this, as our vicar and churchwardens have resolved not to "perambulate" this year, on account of the heavy expense it entails on them, and which they can only legally charge upon the "rates" once in three years. It has been the custom in this parish to "perambulate" every year, and to take nearly all our school children, 1,200 or 1,300, and the cost of refreshments for them (not to mention creature comforts for the higher powers), is no trifle. It is, however, I think, necessary that an *annual* inspection, even on a small scale, should take place, in order to protect the parish from the encroachments and infringements you have pointed out.

X. C. W.

WORKS WITHOUT NOTICE.

BUILDING ACT.

SIR,—Permit me to direct attention to the very inadequate, almost in point of fact *nominal*, *fines* inflicted by magistrates for neglect of notice,—offering a premium to builders to evade the requirements of the Act.

A few salutary inflictions of the 20*l.* penalty would soon cure the evil, and be an act of justice to the really honest builders. It would also save a great amount of trouble to all parties, as such work is generally wrong, and executed in an improper manner. Such *mistaken* leniency on the part of magistrates simply emboldens offenders.

Under the Act of 1844, in addition to the 20*l.* penalty, we had also treble fees for default of notice. It is notorious that since the abolition of the treble fees, the work improperly carried out without notice has largely increased.

A SURVEYOR.

THE CUPOLA AND THE BASILICA.

MR. WIGLEY'S courteous readiness to explain the two points of his lecture, upon which you allowed me to make inquiries, is acknowledged as soon as my *Builder* is to hand. The only way of conducting the discussion to a definite conclusion is for one of your correspondents to state clearly the position to which he wishes the other to adhere. For example, I suppose that Mr. Wigley did not mean, by *cupola*, anything but a roof resting on a circular or polygonal tambour or curb, or covering the space formed at the intersection of two avenues. He did not, by saying that such a cupola was to be found in many churches of the East, mean to intimate his belief that until the Crusades no church in Europe had such a cupola: he did not, by saying that the Crusaders borrowed it from the Arabs at Jerusalem, mean to deny that the Arabs had never made a cupola up to that time, except by the employment of Byzantines: he did not, by saying that the cupola was introduced after the Crusades, mean that the cupola was unknown to the churches of civilized Europe of that time, nor even that in Europe the prevalence of cross churches with cupolas began after the Crusades. Otherwise, I must ask him to support, in some manner, the assertions that *the cupola, so defined, was invented by the Arabs; borrowed from them for the Eastern churches; and not known in any part of Europe till* 1100. These seem to be legitimate translations of his words, and are to me astounding propositions.

With regard to the *basilica*, he seems to think that a room of the least secluded character in a

* The suggestion of this spot as a site for the National Albert Memorial, by a "Member of the Mansion House Committee," may be remembered by our readers.—ED.

house was the type of the early Christian churches, wherever they existed, rather than the synagogue or the public basilica. Upon reflection he will probably agree with the general teaching that, until the Christian religion was tolerated, congregations listened to their teachers in synagogues, and other public places, or else in secrecy; and that the reception-room, *basilica*, of a Roman noble's palace was not likely to be used, when, according to all tradition, the crypt was more safe than the mansion for a congregation.

G. V. R.

WHAT IS A BRICK?

THE case, Goote *v.* Stone, heard in the Court of Queen's Bench on Friday, was an action on a lease of a brickfield to recover a "royalty" reserved thereby, of so much per thousand of "bricks" made. The question raised upon appeal from a County Court judge was, whether this meant bricks in the mould, or bricks after they had been burnt and fully made. A similar point had arisen on the word "pipes and pantiles." The County Court Judge had decided in favour of the plaintiff, that the lease meant bricks in the mould. Mr. Mellish, Q.C., argued for the defendant, the appellant, that this was wrong, and that the word "bricks" meant not bricks in the mould, but bricks burnt and fully made. "A brick is not a brick until it is burnt. It is a mere piece of clay. If a man buy bricks he surely means burnt bricks. He would be disappointed if he received a cartload of lumps of clay."—The Court thought that the meaning of the words must depend upon the sense in which they must be taken with reference to the object in view. The object of a man who bought bricks was to use them, and so they must mean burnt bricks. But the object of the lease was to levy a royalty on the quantity of clay derived from the land, and in that sense it must mean bricks in the mould.—Judgment for the respondent.

Books Received.

Lectures on the History of England. By WILLIAM LONGMAN. Lectures Fourth and Fifth. London: Longman & Co. 1863.

Mr. Longman has now completed the first volume of his excellent "Lectures on the History of England." With the fifth and last in the volume he has issued the Preface and an Index of the Contents. In the Preface he says,—

"I feel that some explanation is needed of the reasons which have induced me to step out of my province as a publisher, and encroach on the domains of authors; for, independently of a natural feeling, akin to jealousy, which either author or publisher must feel if one or the other attempt to combine the two vocations; it is clear that they cannot, as a general principle, be united with advantage. I trust, however, that authors will forgive me, and not revenge themselves by turning publishers. There is, nevertheless, some advantage in a publisher dabbling in literature; for it shows him the difficulties with which an author has to contend—the labour which is indispensable to produce a work which may be relied on;—and it increases the sympathy which should, and which in these days does, exist between author and publisher.

The circumstances which caused me to undertake the laborious, but most agreeable, task of giving Lectures on the History of England, were these. A Society for the Improvement of the Labouring Classes was formed in 1855 in the small village of Chorleywood, in Hertfordshire, the population of which was almost entirely agricultural. After this society had been established for a year or two, it was thought desirable that monthly evening Lectures should be delivered during the winter season. These were well attended; and, having given in 1857 a Lecture on Switzerland which seemed to interest my agricultural neighbours, I was requested by the incumbent of the district, the Rev. A. Scrivenor, to deliver a series of Lectures on the History of England. In an easy moment I promised to do so. . . . I became fascinated with the subject. It laid hold of me and would not let me go; and thus it was that I became entangled in authorship."

And well it was that he did: these lectures are a model of clearness and simplicity of style; and as such they are suitable to readers of any class. To those for whom they were written they must have given especial pleasure from the consciousness that every word of the lecturer was understood as he went on with his interesting sketches of the history of their native land.

The two parts now issued include the period beginning with the reign of Edward I. (A.D. 1272), and ending with the reign of Edward II. (A.D. 1327).

Britanno-Roman Inscriptions: with Critical Notes. By the Rev. JOHN MCCAUL, LL.D., President of University College, Toronto. Rowsell, Toronto: Longman, London. 1863.

DR. MCCAUL had occasionally, for the last five years, contributed articles to the *Canadian Journal* on this subject; and he has here collected and extended them into a goodly volume, the greater part of which consists of notes of more or less interest.

It is gratifying to see a critical and learned work such as this coming to us from the colonies; and also to find that its subject has been there held to be of sufficient interest, not only for publication in a colonial journal, but for reprint by the colonial press.

The work, we doubt not, will be deemed of value in England no less than in Canada, and also in the United States.

VARIORUM.

"The Year Book of Facts in Science and Art. By John Timbs, F.S.A. London: Lockwood & Co. 1863." It is always with a pleasant relish that we cut up the pages of "The Year Book of Facts;" but we have so often expressed our good opinion of this now long-established and standard series of Year Books, that all we need now do is to note the issue of the volume containing all "the most important discoveries and improvements of the past year; in mechanics and the useful arts; natural philosophy; electricity; chemistry; zoology and botany; geology and mineralogy; meteorology and astronomy."——"Education and Manufactures: the Second Part of the Jury Report, Class XXXI., International Exhibition. By Alfred Tylor. London: Longman & Co." This is a reprint from the Jury Reports of Mr. Tylor, the deputy chairman and reporter of Class XXXI; and has already been quoted in our pages at some length. It treats of Scientific and Art-Education in relation to progress in manufactures—Education in England—and Foreign Schools. Under the first head, strikes, wages and prices, trades' unions, building and other societies, crime, &c., are treated of; under the second, gratuitous education, influence of parents, high education, training and working men's colleges, Government education, &c.; and under the third, schools in France, Germany, and Belgium, as compared with drawing schools in this country.——"A Letter to William Howard Russell, LL.D., on Passages in his 'Diary North and South.' By Andrew Dickson White. London: H. Stevens. 1863." The author of this pamphlet also calls it, on the cover, "A Word from the North-West," which implies, as the leaning of it does, that he is a Federalist. Dr. Russell, however, gave so fair an account of both North and South in his "Diary," that we are not inclined to go into the charges here made against him; which, as seen through Northern spectacles at the present exciting moment, are quite as likely to have a twist of their own as any remarks made by a disinterested "foreigner" such as our American cousins are so fond of calling a "Britisher." The state of opinion in this country on the great questions which are more than merely agitating the once United States, is certainly a very anomalous one. We voted many millions sterling to get rid of the stain of slavery ourselves; and yet we do not sympathise so generally and fully as might consistently have been expected with those who are trying to remove that stain from themselves in America. Perhaps the recollection that the movement for the suppression of slavery in the North had a merely political origin; and that slavery was actually reserved as a good thing to loyal states, and taken away from rebellious ones, has something to do with this anomalous state of opinion; and so doubtless has natural sympathy with those who are fighting for their own freedom, whatever they may be doing with regard to that "domestic institution" which we ourselves fastened on them, as "an old man of the sea," of whom it must be difficult to get rid, in a case where the evil is not merely colonial and local, as with us, but a deep-rooted national and all-pervading one with the South. Mr. White's letter is very well written, from his own point of view.

Miscellanea.

THE MIDDLE-LEVEL CATASTROPHE.—There will be no new trial, Chief Justice Erle (who tried the case) being satisfied with the verdict.

PARIS TO BE LIT BY ELECTRICITY.—The lighting of Paris, it is stated, is to be intrusted to M. J. Van Malderan, who has invented a new electric light, one jet of which is equal to 2,200 jets of gas. The Place Saint Sulpice is destined to be the first where the essay is to be tried.

NEW HOTEL AT BLACKPOOL.—The South Blackpool Hotel Company, Limited, have secured a site at South Blackpool, Lancashire, contiguous to the station of the proposed Preston, Lytham, and Blackpool Railway, on which to erect a hotel on an extensive scale, combining all the modern improvements. The company propose to raise a capital of 50,000*l.*, in 10,000 shares of 5*l.* each.

TREASURE TROVE.—Sir: Whilst the reading account of the destruction of some very valuable treasure found at Mountfield, in Sussex, it occurred to me that if the Government were to empower the surveyors of our provincial towns, or the village schoolmaster where there is no surveyor, to secure for them, under proper regulations, all treasure trove, and allowed them a small per centage, many things of interest and value would make their appearance.—DEBRIS.

DWELLINGS FOR THE WORKING CLASSES.—With a view to promote enlarged investments of capital in model dwellings and other establishments for the benefit of the working classes, the Council of the Society of Arts has instituted a statistical inquiry into the results hitherto obtained, including family dwellings of every description, model lodging-houses, dormitories, refuges, baths and washhouses, soup kitchens, coffee-houses, &c.: any who can supply information, or indicate sources where it may be obtained, are requested to communicate with the secretary, who will send blank forms for being filled up with the required data.

DAMAGES: THE LATE ICE-HOUSE ACCIDENT AT ISLINGTON.—The case Harrold *v.* Gatti was an action to recover compensation for injuries received through the alleged negligence of the defendant's servants. The defendant pleaded not guilty. The plaintiff is a bricklayer's labourer, and the defendant formerly carried on business at Hungerford Hall. In January, 1862, the defendant was constructing a large ice-well on his premises in the Caledonian-road, Islington, when the roof fell in, and the plaintiff received the injuries complained of. The action was terminated by the defendant's consenting to a verdict for the plaintiff for 80*l.* Verdict accordingly.

THE LIVERPOOL WELLINGTON MONUMENT.—The statue of the Duke has been safely placed on its pedestal at the top of the monument, on the site appropriated by the Town Council, near the St. George's Hall. The statue, which is of bronze, weighs five tons and four cwt., and the contractors, Messrs. Holmes and Nicol, commenced to hoist it up on Saturday morning at four o'clock. At eleven o'clock the statue was placed in position on the pedestal at the top of the column. During the operation Mr. Nicol, the contractor, Mr. Glaister, the mason who constructed the column, and Mr. Lawson, the sculptor, were present. The figure was then bolted down, and a sheet thrown over it, until the inauguration on Saturday. The panels for the base of the monument, and the four eagles that are to be placed, one at each angle of the cornice of the pedestal, were not ready.

WORKING MEN'S CLUB AND INSTITUTE UNION. A conversazione in connexion with this movement has been held at the Hanover-square Rooms, and was numerously and fashionably attended. Lord Lyttelton presided. The proceedings commenced with a musical performance by the choir of the Working Men's College. The refreshments were set out in the drawing-room for nearly 1,000 guests. The meeting was addressed by the chairman, the Dean of Christchurch, the Rev. H. Solly, and other gentlemen, explanatory of the objects and claims of the Union. The Union, as we have before noted, was formed for the purpose of helping working men to establish clubs or institutes where they can meet for conversation, business, and mental improvement, with the means of recreation and refreshment, free from intoxicating drinks, the clubs at the same time constituting societies for mutual helpfulness in various ways.

CERAMIC MEMORIAL OF THE PRINCE CONSORT.—The council of the Art-Union of London have been honoured with the following letter, addressed to the hon. secretaries, and dated—"Osborne, 11th May, 1863.—Gentlemen: I have had the honour to present to her Majesty the Queen the tazza which accompanied your letter of the 8th of May. The Queen has commanded me to return her best thanks to the council of the Art-Union for their attention, and to assure them that her Majesty will value very highly this very creditable example of printing on ceramic ware.—I have the honour to be, gentlemen, your most obedient humble servant,

(Signed) C. B. PHIPPS."

SHOCKING ACCIDENT WITH GIRDERS AT BIRMINGHAM.—At the works of Messrs. Smith & Sons, at Springhill, two large girders had just been finished and weighted with about forty tons each of pig iron to test them, when both girders fell, burying beneath them and the pig iron Mr. Charles Grace, of Bath, inspector of girders to Mr. Marsh, C.E., and a workman from Smethwick: they were of course fatally crushed, Mr. Grace indeed being killed on the spot, while the workman shortly afterwards died. The report speaks of the fall of the girders but not of their fracture: they were placed on blocks of wood 5 feet only from the ground.

NEW ACT ON GARDENS IN CITIES AND BOROUGHS.—An Act of Parliament has just been printed, for the better protection of gardens and ornamental grounds in cities and boroughs. The object of the statute is to free from neglect or encroachment gardens in squares and other places; to vest them in the Metropolitan Board of Works or other corporate authority, or vest them in a committee of rated inhabitants, for keeping the same as a garden or pleasure-ground, otherwise the same to be vested in a board or parish, to be kept as an open space or street. By-laws, to be approved of by a judge of common law or justice at sessions, are to be made for the management of the places, and penalties to be enforced for non-observance of the same.

THE METAL WORK AT THE INTERNATIONAL EXHIBITION.—On Monday night the third of a series of six lectures having reference to some of the contents of the recent International Exhibition, was delivered in the Birmingham and Midland Institute, by Mr. W. C. Aitken; the subject being "The Metal Work of the Exhibition of 1862. The lecturer pointed out the great progress which had been made in iron and steel—especially in wrought iron—since the Exhibition of 1851; and mentioned in illustration a variety of instances showing how extensively these metals were used. No nation exhibited at the International Exhibition iron castings equal to those shown by Sheffield and Derby houses, and by manufacturers of Coalbrookdale and elsewhere. Great improvements were shown in the plate workings and in enamelling on iron; and among the other products in which advances had been made since 1851 was the manufacture of jewelry in aluminium and bronze. Birmingham he showed to have been well represented in many manufactures; and during the evening mentioned several firms who had contributed largely to the Exhibition. He concluded by remarking that in all the metals the progress made since 1851 was very considerable. All that was done in iron resembled more the feats which the Grecians might ascribe to their blacksmith gods than the labour of human beings.

THE DRINKING FOUNTAIN MOVEMENT.—A drinking-fountain which Mr. John Brett has presented to the Ipswich public has been opened at the Arboretum. Mr. T. S. Gowing, who takes a great interest in all that pertains to the Arboretum, suggested that the opening should take place with some little ceremonial, and several hundreds assembled round the fountain: Mr. Gowing opened it, and then read some verses which he had composed in honour of the occasion. The structure stands on two steps of Portland stone, and is of a quadrangular form, divided into two unequal parts by a bold ornamented moulding. The basement portion has on each of the four sides a projection semicircular on plan, containing a basin fluted from its circumference to the centre, after the manner of the water drains of the ancient piscinas. Above these projections, sunk into the face of the wall, there is on each side a small recessed arch, with incised ornamentation. On the recessed slabs are spouts surrounded by iron scrollwork, with chain and galvanized cup on one side, and pull for water on the other. At the angles of the upper portion are banded shafts of Purbeck marble, with floral capitals supporting an entablature, elaborately carved with water-plants, conventionally treated; underneath which are also disks and lozenge-shaped panels, in red, green, and yellow Devonshire and Sicilian marbles. Over each shaft is a pedestal crowned with a pine cone, and between them are four anthemion ornaments. Above rises a stone roof in shape of a truncated pyramid, each face carved with laurel-leaf scales. The design is Romanesque, freely treated, and the materials used are Aubigny and Corsham Down and Portland stones; wrought-iron; Purbeck and other polished marbles. The fountain was designed by Mr. Phipson.

GALLERY OF ILLUSTRATION.—Mr. and Mrs. German Reed's present entertainment, "A Charming Cottage," increases in popularity; and Mr. John Parry still astonishes and delights in "Mrs. Roseleaf's Evening Party."

LIVERPOOL ARCHITECTURAL SOCIETY.—At the concluding meeting of the session, on Wednesday evening, the 6th inst., from the report of the Council it appeared that there are 157 members of the society. Mr. W. H. Weightman was elected president, and Mr. Kilpin and Mr. Boult vice-presidents, for the ensuing year, and the council and officers for the ensuing year were appointed. The president then read the annual address, in which he reviewed, briefly, the various public works at present in progress in this town and its neighbourhood. He made favourable allusion to the engineering works in course of construction for the Dock Board on the Cheshire side of the Mersey; and made interesting allusion to the different matters, directly and indirectly, connected with architecture, which had occurred in the course of the past year. It was resolved that the excursion this year should be to Chester and Eaton Hall.

ACCIDENTS.—Part of the tower of Preston Church, Suffolk, has fallen. It had for a long time been in an unsatisfactory state, owing to its having been struck by lightning above a century ago, and repaired in an inefficient manner. Lately it had become absolutely necessary to rebuild the staircase, the upper part of which had been taken down for the purpose, when the greater part of the east wall of the tower and a portion of the south wall fell, destroying some of the roof of the nave, and burying under the ruins the gallery of the church, together with the organ. The bells, six in number, are at present uninjured; but the dangerous state of the part of the tower still standing causes anxiety. Had the fall occurred on Sunday, the loss of life must have been great. ——A new three-arch bridge at Trowse, with a centre arch 38 feet in span, and about 9 feet in rise, was in course of erection over the river by Messrs. Stanley & Son, under the direction of the county surveyor, Mr. R. M. Phipson: the bridge, which was built of brick, with an outside facing of stone, had advanced almost to completion, the work having been hastened on account of the traffic; and Mr. Phipson attended in order to ease the centres or supports of the middle arch. The brickwork of the centre arch shortly afterwards gave way, and dragging the stonework with it, fell into the river. No one was injured, as the workmen were at dinner; and it was fortunate the accident occurred previous to the bridge being completed and opened for public traffic.

THE PROJECTED OBSTRUCTION OF LUDGATE-HILL.—The secretary to the Committee for the Preservation of Ludgate-hill remarks that, "the whole railway interest ought to combine to consider the alternative of a tunnel under Ludgate-hill in place of a tunnel over the hill; for if the latter structure should ever be erected, it will be a lasting and fatal obstacle in the way of all future railway communication across the metropolis. Its appearance will be hailed with a shout of execration; it will be smothered with nick-names; and will be known in and about London as the 'Last of the Viaducts.'" The committee, it seems, were ready to raise a light outline model of the air tunnel in position if the authorities had permited, in order that the public might be able to judge ocularly of the dreaded effect of such an obstruction; but really no such step was necessary; and besides, it is questionable whether a light outline model would impress the public eye and mind, as the heavy and opaque reality would, were it once put up. However, the most strenuous exertions ought to be made to get rid of the threatened nuisance. The warning and unsightly air-tunnel at London Bridge will give the public a good enough idea of what they have to expect should the one at Ludgate-hill be carried out, keeping out of view altogether the obstruction to the view of St. Paul's from the western approach. On this subject Mr. Penrose, the surveyor to the fabric of St. Paul's, draws attention in the *Times* to the fact that, seen from Fleet-street, sixty yards before reaching Farringdon-street, the proposed bridge *would* hide more or less of the western façade of St. Paul's, and give in exchange nothing but its deep sides and cavernous soffit—at least forty feet wide. With regard to the practicability of a tunnel in place of a viaduct, the committee are said to have the best professional advice to show that the company might construct such a tunnel, and save money by the alteration in their plans.

VENTILATION OF OUR IRON-CLAD SHIPS.—Ventilation has been applied by Mr. Turner, the master-shipwright, to the *Caledonian*, iron-clad, now building. A powerful force-pump is to expel the vitiated atmosphere, and supply every compartment with pure air.

THE KIDDERMINSTER CARPET FOR THE PRINCE OF WALES.—Nine designers competed and two designs were selected, to one of which the preference was at length given; and it was found to be by Mr. Harvey, of Kidderminster, who obtained several medals at the International Exhibition for his designs. The other was by Mr. Benjamin Perks, also of Kidderminster, a young man of twenty, whose design was highly praised. In the successful design, while aiming at as rich an effect as possible, the artist has endeavoured to connect the carpet in some way with the Prince. He has consequently introduced the Gothic rose, alternating with the Dagmar Cross, in the principal portion of the border; whilst the inner border has been set apart for the monogram "A. E. A." and the coronet. The next thing will be to select by ballot the manufacturer of the carpet.

THE CHURCH OF SANTA CROCE, FLORENCE.—On Sunday last, says a recent letter from Turin, one of the finest creations of modern Italian taste and genius,—the façade of the world-renowned Church of Santa Croce of Florence,—was, amid the enthusiastic acclamations of the Florentine population, unveiled to public gaze,—Prince Carignano, as representative of his royal cousin, the King, with the Minister of the Interior, and all the government and municipal authorities, taking part in the ceremony. This façade is in Florentine mosaic, but the only marbles employed are green prato marble, and the white marbles obtained from the old Tuscan quarry, which Michelangelo preferred to all others when choosing the material of his statues, though perhaps, being from a different part of the quarry, of a rather rougher grain. It is to the care and munificence of an English resident in Florence—of Francis James Sloane—that the successful and speedy completion of the magnificent façade is mainly due. His pecuniary contribution to the work is said to be about 200,000 francs; but, in all probability, it has been a great deal more, because, whenever, since that work first began, a temporary difficulty was experienced for want of sufficient funds, Mr. Sloane's purse was instantly opened, and the difficulty forthwith removed. The subject of the chief bas-relief is the "Exaltation of the Cross," which surmounts the middle door of the church, and is itself again surmounted by the statue of the mourning mother of the Saviour. The work has been executed by Giovanni Dupré.

NEW BARRACKS AT DOVER.—The south front new casemated barracks, situate in a deep and newly-formed trench in front of the married soldiers' quarters, near the citadel, have at length reached completion. The contractors are Messrs. Lee & Son, of London. This structure has contained six millions of bricks in its construction. At the east-north-east angle rises a pier to the height of 67 feet, being 18 feet by 15 feet in thickness, and the whole is set in Portland cement. The front walls are 4 feet 8 inches thick; the party walls 4 feet 3 inches; and the back walls 2 feet 3 inches. The mean height of the building is 53 feet; its length 314 feet, with a return of 100 feet, making 414 feet of frontage. The building has three stories, above the third of which is a series of arches of 20 feet span, each consisting of eight rings of bricks set in Portland cement. The whole is bomb-proof; and preparation is made at the top of the building for a battery, not included in the present contract. Near the grand entrance to the barracks is a winding wainscot staircase, from which a spacious corridor leads off on the first floor to the mess-room and officers' quarters. The mess-room is 30 feet by 18 feet. Contiguous to this is the mess establishment, consisting of ten rooms, in addition to an ante-room. In other parts of the barracks are a sergeants' mess-room, 30 feet by 20 feet; eight sergeants' rooms; 23 soldiers' rooms, 30 feet by 20 feet, each adapted for 11 men; quartermaster and barrack-master's stores; tailor's, shoemaker's, and armourer's shops; orderly-room, guard-room, prisoners' rooms and cells, into the latter of which warm air is admitted by means of flues. The depth of the building from the front is 37 feet, and beyond an area of 25 feet deep; at the back is a terrace 10 feet wide, which runs along the front of the back offices, including cookhouses, bath and ablution-rooms, &c. The building has been under the superintendence of Mr. Bispham for the contractor; and of Mr. Downer, for the engineer department.

ANVIL BLOCK CASTING, SHEFFIELD.—Messrs. Stanley & Co., iron founders, Midland Works, Sheffield, have cast an anvil block, weighing one hundred tons. The operation of casting began about eight o'clock, and continued until three. The mould—to the uninitiated only an immense hole in the earth—was situate in the centre of a spacious casting-room, having on each side a powerful crane, by which the molten metal was conveyed in ponderous "ladles" from the furnaces to the mould. The metal was run from two large cupolæ and two air furnaces. The anvil block is intended for a 12½-ton Nasmyth's double-acting steam-hammer, resting on a foundation of oak blocks, 11 feet square by 4 feet deep, and 120 large piles driven 10 feet in the ground by steam power. The hammer is for forging the homogeneous metal for the large Whitworth guns and projectiles, marine engine-cranks, and other shafts, weighing from 5 to 8 tons each.

TRANSPLANTING OF LARGE TREES.—Sir Joseph Paxton and other English horticulturists were, we believe, the first who attempted, or at any rate perfected, the system of removing large trees from one place to another; but during the last few years it has been practised in Paris to an extent unknown elsewhere. At spring and fall the transplanting trucks, or wheeled frames, are to be seen in all directions, and the Champs Elysées, the Boulevards, and the various squares recently laid out in many parts of the town, have been adorned with thousands of noble trees by these means. A report was made on the subject the other day to the Central Society of Horticulture, by which we are told that horse-chestnut trees more than 39 inches in diameter, and a catalpa tree 150 years old, and 23 inches in diameter, have been transplanted with success. Another and very remarkable case is mentioned, namely that of three good-sized trees growing in such a manner that they could not be separated, having been removed together from a private garden about to be destroyed, the mass of roots and earth measuring five metres, or about sixteen feet English in length. It has been discovered, that the bleeding of trees, and the attacks of insects, after the cutting off of branches, may be effectually stopped by the simple method of well brushing the part exposed with a paste made of wood-ashes and water: the ash enters between the fibres of the wood and prevents exudation, while the alkaline property of the mixture keeps off insects.—*Popular Science Review.*

THE NOTTINGHAM SEWERAGE, &c.—The annual report of the Highway Committee has just been presented to the council. The report states that the sewerage of the borough is steadily progressing. The most important work of the sewerage during the last year consists of the river Leen culvert and intercepting sewer which was completed in January, 1863. The culvert commences at the Cork Holes, and terminates, for the present, at the bottom of Finkhill-street; and the formation of it has considerable effect upon the surrounding district, and will, year by year, continue to give greater efficiency to the district sewerage. The total expense of the new work has been under the sum of 4,500*l.*, the original estimate. For a considerable time past the general condition of the public sewerage has been under investigation. Old sewers have been opened and examined and their state registered: all permanent sewers have also been examined and placed on the plans of the sewerage: manholes have been constructed for access and inspection; and all new works have been designed and carried out with a view to permanency, and the object of perfecting the general sewerage of the borough as early as possible. The amount of permanent sewerage already established within the borough is about as follows:—Executed by the late St. Mary's Highway Board in that parish and in the new inclosure, 8,779 yards; executed by St. Peter's Highway Board, 352 yards; executed by the Local Board during the last three years in the old town and in the new inclosure, together above 5,855 yards; to which if is added the quantity of sewerage executed by the Inclosure Commissioners, a total extent of permanent borough sewerage is obtained of about 15½ *miles*. The panterpits in connexion with the street sewerage (upwards of 2,000 in number) have been repaired as far as possible, and in forty-five streets improvements have been made. All the sewerage and other public works contained therein, and in connexion with the other committees of the council, are carried out from the plans and under the personal superintendence of Mr. Tarbotton, C.E., the corporation surveyor.

NEW BRANCH OF TRADE AT COVENTRY.—Ribbons not being wanted, Messrs. J. & J. Cash, of Coventry, according to the local *Herald*, have employed some of their looms in an entirely new article of manufacture, viz., strips of muslin of all convenient widths for "frilling," woven in the loom, so that a firm edge, resembling a hem, is formed on one side, and a running thread is inserted on the other, by which the material can be gathered up at once for frilling purposes. Every lady, it seems, who knows the expenditure of time and trouble in hemming and "whipping" breadths of muslin for frills, will thank Messrs. Cash for the invention.

ANTIQUARIAN.—A tesselated pavement has been discovered in the old nursery ground, adjoining the county hospital, Dorchester, during excavations for a drain to a village residence building there. It was scarcely 2 feet below the surface, and the *débris* on the top included several roofing slabs, resembling those found under similar circumstances in the enclosure of Dorchester Castle. ——Some quarrymen excavating around the Roman encampment on Cleeve-hill, says the *Gloucester Chronicle*, have opened what are locally termed "soldiers' graves," and coins, burnt bones, the foundations of a Roman dwelling, and relics of various kinds, have been found. The Earl of Ellenborough, as lord of the manor of Southam, in which the discoveries have been made, has stopped further excavations until the ground has been examined by experienced archæologists. About three miles from this spot, to the right of Winchcomb, an entire Roman villa has been discovered, and is now laid bare. The relics discovered will be preserved at Sudely Castle. The villa is similar in many respects to that at Witcomb, in the park of Lady Cromie, and has reception-rooms, and wet and hot *hypocausts*, or baths. The tesselated pavements are finely arranged, and various designs adorn each apartment. The average dimensions of the rooms are about 15 feet square.

TENDERS.

For the new Roman Catholic Church at Stourbridge, for the Rev. Walter Keen. Mr. E. Welby Pugin, architect:—

Bloomer	£4,390 0 0
Hartland	3,887 0 0
Alsop & Son	3,859 0 0
Lovatt	3,850 0 0
Grow & Son	3,728 16 0
Smith	3,553 0 0
Stockton & Seile	3,467 0 0
Hevingham	3,281 0 0
Ife	3,177 0 0
White	3,100 0 0

For Warlingham Parsonage. Mr. R. W. Drew, M.A., architect. Quantities supplied by Mr. J. A. Bunker:—

Wells	£851 0 0
Downs	840 0 0
Carruthers	795 0 0
Rowe	715 0 0
Ward	710 0 0
Turner & Sons	667 0 0
Newcombe	643 0 0

For the erection of two shops and dwelling-houses in Knight's-hill-road, Lower Norwood, Surrey, for Mr. Barnett Meyers. Messrs. Tillott & Chamberlaine, architects. Quantities supplied:—

Browne & Robinson	£2,320 0 0
Piper & Wheeler	2,300 0 0
Ashby & Sons	2,261 0 0
Fish	2,247 0 0
Cannon	2,235 0 0
Wills	2,229 0 0
Hill, Keddell, & Robinson	2,187 0 0
Deacon	2,025 0 0
Ward & Co. (accepted)	1,979 0 0

For rebuilding Llanllwchaiarn Church, Cardiganshire. Mr. Withers, architect:—

D. J. Jones	£1,838 0 0
Thos Jones	1,440 0 0
Rees & Williams	1,271 8 0
Davies	1,150 2 0
Griffiths	1,097 12 0
Thomas (accepted)	1,052 10 0

For additional wing to St. Mary's College, Harlow. Mr. Withers, architect. Quantities supplied by Mr. Poland:—

Perry & Judson	£1,343 0 0
Sharpington & Cole (accepted)	1,249 0 0

For the construction of a wooden foot-bridge across the North London Railway, to connect Railway and Chrisp-streets, Bromley. Mr. Robert Parker, Surveyor:—

Inman	£393 0 0
Hall	340 0 0
Watts	332 0 0
Phillips	329 0 0
Hack & Son	326 0 0
Cole & Son	298 0 0
Andrew Killby	288 0 0
Francis Hedges (accepted)	276 0 0

For the erection of a porter's lodge to the County Hospital at Huntingdon. Mr. Robert Hutchinson, architect. Quantities supplied:—

Richardson	£199 14 6
Haile & Brown	199 0 0
Bird	176 0 0
Cennell	174 6 0
Brown & Rowe	172 10 0
Balmer	172 7 0
Thackery & Son	164 0 0

For re-building premises, High-street, Homerton, for Mr. C. H. Pulley. Messrs. Wales & Sparks, architects:—

Conder	£1,080 0 0
Robinson	1,033 0 0
Henshaw	894 0 0
Brett	868 0 0
Skinner, Brothers (accepted)	830 0 0

For the erection of two dwelling-houses and shops, in the Strand, Dawlish, for Mr. Wm. Hatcher. Mr. W. F. Cross, architect:—

Stafford	£1,452 0 0
Stamp	1,340 0 0
Woodman	1,200 0 0
Sanders (accepted)	1,195 0 0

For erecting warehouse in Southwark-bridge-road, for Messrs. Pocock, Brothers. Mr. Henry Jarvis, architect:—

	Difference, Stone instead of Cement.	Total.
Rider	£181 0 0 ..	£5,198 0 0
Gammon	206 0 0 ..	4,808 0 0
Patrick & Son	207 0 0 ..	4,787 0 0
Higgs	144 0 0 ..	4,623 0 0
Browne & Robinson	198 0 0 ..	4,571 0 0
Turner & Sons	176 0 0 ..	4,489 0 0
Lawrence & Sons	129 0 0 ..	4,486 0 0
Myers & Sons	250 0 0 ..	4,316 0 0
Henshaw	203 0 0 ..	4,214 0 0

For a twelve-roomed villa residence, for Mr. R. A. Davis, Basingstoke. Mr. G. B. Mussellwhite, architect:—

Ellis	£1,185 0 0
Simms	1,165 0 0
Biggs	1,070 0 0
Nicholls & Son	1,045 0 0
Lichfield	1,039 0 0
Buddem	1,038 0 0
Jennings	1,011 7 7
Pritchard (accepted)	912 0 0

For chapel, schools, &c., at Peckham Rye. Mr. J. K. Bland, architect:—

Higgs	£3,050 0 0
Willis	2,976 0 0
Cooke	2,970 0 0
Colls	2,939 0 0
Dearsley	2,902 0 0
Simms	2,759 0 0
Thompson	2,654 0 0

For public-house and baker's shop at Stockwell, for Mr. Goddard. Mr. Rawlings, architect:—

		If Plate-glass front.
Bamford	£1,130 0 0 ..	£1,155 0 0
Taylor	1,129 0 0 ..	1,142 0 0
Thompson	1,080 0 0 ..	1,100 0 0
Harrington & Brown (accepted)	1,065 0 0 ..	1,090 0 0

For the erection of a villa for Mr. Henry Warden, in the St. James's-road, Tunbridge Wells. Mr. James Blundell, architect:—

Elliott	£1,039 0 0
Edwards & Walklin	924 4 0
Walker	869 10 0
Pink	758 10 0
For Plasterer's work (separate):—	
Twort	£173 15 0
Mason	169 15 0
Wenban	169 12 0

For house and stables at Beulah-hill, Norwood. Mr. Sextus Dyball, architect. Quantities supplied by Mr. Poland:—

Turner & Son	£3,825 10 0
Gammon	3,657 0 0
Ashby & Sons	3,591 0 0
Browne & Robinson	3,539 0 0
Colls & Co.	3,483 0 0
Tarrant	3,289 0 0
Sharpington & Cole	3,287 0 0
Macey	3,279 0 0
G. & R. Buck	2,760 0 0

For a house and offices at Sudbury, for Mr. J. Cowper. Mr. Alfred Smith, architect. Quantities supplied:—

Sewell	£3,182 0 0
Chapman	3,100 0 0
Woodward	3,000 0 0
James & Ashton	2,967 0 0
Macey	2,889 0 0
Mansfield	2,880 0 0
Patman & Fotheringham	2,850 0 0

For dwelling-house for Mr. H. Heath, Grange-road, Upper Norwood. Mr. H. Gale, architect. Quantities not supplied:—

Colls & Co.	£1,776 0 0
Deacon	1,700 0 0
Marshall	1,670 0 0
Smith	1,600 0 0

For erecting new house for Mr. Smart, at Romford, Essex. Mr. F. F. Thorne, architect:—

Browne & Robinson	£2,100 0 0
Marsland & Son	2,070 0 0
Perry & Judson	1,970 0 0
Hammond	1,745 0 0
S. Cook	1,718 0 0

For alterations to Oriel Lodge, Clapton. Mr. John Wallen, architect:—

Skinner, Brothers (accepted)	£330	0	0

For house and stables in Bow-road, for Mr. H. Garman. Messrs. Hammack & Lambert, architects. Quantities supplied:—

Forrest	£1,779	0	0
Houlett & Brown	1,774	0	0
Marshall	1,700	0	0
Hall	1,690	0	0
Heath	1,687	0	0
Bond	1,651	0	0
Hart	1,625	0	0
Ennor	1,576	0	0
Ward	1,574	0	0
Hedges	1,550	0	0
Robinson	1,547	0	0
Johnson	1,530	0	0
James & Ashton	1,519	0	0
Parry & Judson	1,415	0	0

Tenders for warehouses in Cannon-street, City.—We are asked to state in reference to these tenders, inserted by us on 9th inst., and in which the lowest was not accepted, that the decision was come to on the question of time; and throws no discredit on Mr. Rider.

TO CORRESPONDENTS.

Ornamental Art in Japan.—We are forced to postpone continuation of this article.

W. C.—A Working Man (none better).—J. B.—A Competitor.—H. R.—Architect (would find it in the Official Instructions issued at the time).—Mr. C.—Mr. P.—R. D. O.—T. S.—B. M P.—V. B.—J. B—n (next week).—H. R.—Mensuration (nine).—W. H. C.—A Pupil (a better word might have been used) S. S.

We are compelled to decline pointing out books, and giving addresses.—S. & S.

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender; not necessarily for publication.

NOTE.—*The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.*

Advertisements cannot be received for the current week's issue later than **FIVE o'clock, p.m.,** *on Thursday.*

☞ *NOTICE. — All Communications respecting Advertisements, Subscriptions, &c., should be addressed to "The Publisher of the Builder," No. 1, York-street, Covent Garden. All other Communications should be addressed to the "Editor," and* NOT *to the "Publisher."*

THE "*Mechanics' Magazine*," Sept. 5, speaking of Benson's Watches, says:—"The number of watches produced at Ludgate-hill is something enormous, touching 15,000 yearly, manufactured on the most approved principle of division of labour, under the personal superintendence of the principal. The firm, as we understand, does not profess to make watches at the lowest price, but the best watches at the price; and from the magnitude of their business, and the necessity for more extensive premises, we may fairly judge that they have received the impress of public approval." Chronometer, duplex, lever, horizontal, repeaters, centre seconds, keyless, split seconds, and every description of watch from the plainest to the highest quality of which the art is at present capable, and adapted to all climates. Benson's Illustrated Pamphlet on watches (free by post for two stamps), contains a short history of watchmaking, with descriptions and prices. It acts as a guide in the purchase of a watch, and enables those who live in Scotland, Ireland, Wales, the Colonies, India, or any part of the world, to select a watch, and have it sent free and safe by post.—J. W. Benson, Prize Medallist, 33 and 34, Ludgate-hill, London. Established 1749.—[Advt.]

ADVERTISEMENTS.

TO AMATEURS, TURNERS, AND OTHERS.—The Valuable Lathes, Tools, and interesting Effects of the late John Taylor, Esq. F.R.S.

MR. FREDERICK A. MULLETT will SELL, at 31, CHESTER-TERRACE Regent's-park, on WEDNESDAY, the 27th inst., at TWELVE, a 4-feet IRON-BEDDED LATHE, with 6-inch centre, and a large assortment of most expensive chucks, by **Holtzapffel & Co.**; a 3-feet bedded lathe, with 5¼-inch centre, with brass and boxwood chucks, &c.; a rose carving and planing machine, with iron bed and frame; a large quantity of valuable engineering tools; about 5 cwt. of hardwood; benches; nests of drawers; mahogany cases, &c. May be viewed the day prior and Morning of Sale, and catalogues had on the premises, and at the Auctioneer's offices, Albion-place, Hyde Park-square, W.

NORTH LONDON RAILWAY.—KINGSLAND JUNCTION.

MESSRS. KENNEDY & BONNY will SELL by AUCTION, by order of the North London Railway Company, on the PREMISES, near the Kingsland Station, on TUESDAY next, MAY 19th, 1863, at TWELVE, the first portion of the excellent MATERIALS of about SEVENTY HOUSES and SHOPS, situate at Kingsland-green, Charles-street, Hartwell-street, Back-road, Dalston-lane, Forrest-row, &c. &c.—May be viewed the day previous to Sale, and catalogues had at the Offices, Kingsland-road and Camden Town.

THREE ACRES of VALUABLE FREEHOLD BUILDING LAND, Barnes, close to the Hammersmith Bridge.

MESSRS. GLASIER & SON are instructed to SELL by AUCTION, on WEDNESDAY, JUNE 3rd, at TWELVE for ONE o'clock, in one or more LOTS, Three Acres of VALUABLE FREEHOLD BUILDING LAND, with a Frontage of about 700 feet to an occupation road leading out of the Hammersmith Bridge Road.—May be viewed, and Particulars had of F. HAINES, Esq. Solicitor, 178, Edgeware-road; at the Boileau Arms, Barnes-road; at GARRAWAY'S; and of the Auctioneers, 41, Charing Cross, S.W.

BUILDING MATERIALS, BRIDEWELL.

MESSRS. GLASIER & SON are favoured with instructions from the Governors of Bridewell Hospital to SELL by AUCTION, on the PREMISES, on WEDNESDAY MAY 27th, and following days, at TWELVE for ONE, the valuable BUILDING MATERIALS and FITTINGS: comprising 1 000 0 0 capital stock bricks, several thousand feet of capital York and Portland stone in paving, coping, steps, string courses cills, &c.; 100 squares of slating, slating-boards, rafters, flooring, boards and joists, turret clock and bells, iron doors, railings, bars, gi ders, and gratings, about 30 tons of lead, coach-house gates, sashes, doors and frames, large coppers, slate cisterns, large steam cooking apparatus, chimney-pieces, stoves, ranges, and other fixtures and fittings.—May be viewed the day prior and mornings of sale, and catalogues had on the premises; and of the Auctioneers, 41, Charing-cross, S.W.

SURREY.—Very Eligible Building Land at Walton, a beautiful open and healthful heath district, on the main line of the South-Western Railway, 40 minutes' ride from London.

MESSRS. RUSHWORTH, JARVIS, & ABBOTT are instructed to announce for SALE by AUCTION, on FRIDAY, JUNE 26th (unless previously disposed of), about 120 acres of FREEHOLD BUILDING LAND, part of the Ashley-park Estate, extending from the railway-station towards the village of Walton-upon-Thames, a distance of about a mile and a quarter by the direct road, and occupying nearly the entire frontage, besides very extensive and valuable frontages to the main roads in other directions. This land, which is all of a dry sand and gravelly soil, might be brought into immediate operation as sites for gentlemen's residences of the first-class, and presents a highly important and most attractive building property, worthy the attention of large capitalists as a sound and lucrative investment—a statement fully justified by the successful result of the building operations which have taken place on the Oatlands-park Estate adjoining, though at a greater distance from the metropolis, and further from railway accommodation. The land is now cultivated as arable, and is ornamented with beautiful plantations and trees from 30 to 50 years' growth, available in laying out the ground for first-class villa residences, which are much sought for in this locality, and from the proximity to the railway station would readily secure tenants.—Further particulars may be obtained at the Offices of Messrs. RUSHWORTH, JARVIS, & ABBOTT, Land Surveyors and Auctioneers, Savile-row, Regent-street, W. and 19, Change-alley, Cornhill, E.C. who are authorised to negotiate a sale by private treaty.

OUNDLE, NORTHAMPTONSHIRE. — VALUABLE FREEHOLD ESTATE.—The Talbot Inn, as a Private House.—TO BE SOLD BY AUCTION, by

MR. S. DEACON, on the PREMISES, on the 28th day of MAY, 1863, at SIX o'clock, in the Evening, in one or more Lots, as may be determined upon and subject to conditions of Sale, all that capital Messuage or Dwelling-house, so long known as THE TALBOT FAMILY INN AND POSTING HOUSE, situate in the centre of the Town of Oundle, with a large frontage in New Street, adjoining the Market Place, together with the garden, extensive range of stabling, granary, and lofts over them, coachhouses, outbuildings and yards in the rear, covering half an acre of land. The House, which may be termed the interesting feature of the town, from its Elizabethan front, built with part of the stone from Fotheringhay Castle, contains numerous sitting-rooms, kitchens, and all usual offices on the ground floor, a large dining or ball room extending along the whole front of the building, with nine good bed-rooms and closets on the first floor, and seven attics above. Immediately behind the house is a large yard, wells of excellent water, a good garden, ten stables, barns, and numerous outbuildings, with a private entrance at the back. The inn and premises might at no great expense be easily converted into excellent trade or dwelling houses and good cottages, and parts of the extensive back premises may be advantageously sold off, and the whole estate, from its situation and extent, forms a very valuable investment.—The property may be viewed, and further particulars known, on application to the Auctioneer, and at my Offices, in Oundle. CHAS. THOS. WILSON.

Oundle, 6th May, 1863.

MR. G. NEWENHAM (Pupil of G. G. Scott, Esq. R.A.) PREPARES Sets of Competition Designs, Working and every description of Architectural and Artistic Drawings. Perspectives Outlined in a superior manner (and coloured by the best artists), with punctuality and despatch, and on reasonable terms.—Offices, 26, Parliament-street, Westminster, S.W.

TO ARCHITECTS AND ENGINEERS.

A THOROUGHLY competent QUANTITY SURVEYOR, with a portion of his time unoccupied, will be happy to ASSIST Architects or Engineers in the preparation of quantities, measurements, surveys, writing specifications, &c. either in London or the country.—Address, B. P. Office of "The Builder."

WANTED, a Gentleman to JOIN the Proprietor of large Granite Quarries and Brickworks, doing a large business, with first-rate returns, having large contracts in hand. Capital required, TEN THOUSAND POUNDS. First-class references. For all particulars apply to J. BOYES FOWLER, esq. Solicitor, Plymouth.

PARTNERSHIP.—An Architect and Surveyor, of Middle Age, having a well-established, fair, and improving General PRACTICE in the City, and holding Appointments, is willing to receive a PARTNER. A Gentleman recently out of his Articles would not be objected to. About Ten or Eleven Hundred Pounds would be required.—Address, ARCHITECT, Mr. Young's, 193, Bishopsgate-street Without.

A LAND-AGENT and SURVEYOR in the Country requires, for a short time, an ASSISTANT. One who is well up in Surveying, Levelling, Mapping, &c.—Address, stating particulars as to Salary required per month, &c. to F. F. care of Mr. Grugeon, 75, Old Broad-street, City, E.C.

CAMBRIDGE UNIVERSITY and TOWN WATER-WORKS COMPANY. — MANAGER WANTED. — WANTED, an experienced PERSON, to take the general management and superintendence of the Company's business and accounts. Applications, giving references and stating amount of salary required, to be forwarded to the Directors at their Offices, 7, King-street, Cambridge.—Cambridge, May 8, 1863.

GAS FITTER and BRASS FINISHER.—WANTED, to fill a permanent SITUATION, a thoroughly competent GASFITTER. One who has been used to gasfitting in all its branches, and finishing and lacquering brasswork.—Apply by letter, stating references, to W. E. No. 6, Great College-street, Westminster.

WANTED, an experienced ESTIMATING and MEASURING CLERK. References must be unexceptionable.—Address, stating last engagement, age, and salary, to B. R. 8a, Worship-street, Finsbury.

WANTED, a Young Man, as CLERK in a Builder and Decorator's Office. One who has some knowledge of the business would be preferred.—Address, stating age, capabilities, salary required, and references, to J. M. N. Office of "The Builder."

WANTED, immediately, 25 STONE MASONS.—Apply to Mr. JOSEPH STANLEY, Stone and Marble Works, St. Stephen-street, Norwich.

WANTED, a CLERK of the WORKS, to superintend the erection of several Houses. A practical Carpenter preferred.—Apply, by letter only, to Mr. CÆSAR LONG, Architect, 98, Bishopsgate-street, E.C.

WANTED, on a Nobleman's Estate, an industrious, sober, good workman, as PAINTER, GLAZIER, and PAPERHANGER; must understand the mixing of colours, and be able to do a little Graining. One who has a knowledge of Plumbers' work and Gasfitting preferred. Wages 21s. per week.—Apply, stating age and qualifications, with copies of testimonials, to Mr. IRVINE, Uphampton, Shobdon, Herefordshire.

TO ARCHITECTS AND SURVEYORS' ASSISTANTS.

WANTED, in a Surveyor's Building Estate Office, at the West End, TEMPORARY ASSISTANCE at once. State terms—which must be moderate—age, and reference, to E at Cribb's Library, Westbourne Grove, Bayswater.

WANTED, in an Engineering Establishment in Lancashire, a GENTLEMAN, to undertake the Mechanical Correspondence and Negotiation of the Business in conjunction with the Partners. Liberal salary, a fixed minimum, and a per centage, according to amount of business done.—Apply by letter (if possible, accompanied with testimonials), addressed X. Y. Z. James Street, Esq. Solicitor, Manchester.

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WANTED, a PLUMBER and GAS-FITTER, who has no objection to fill up his time at painting or glazing. If steady and suit, constant employment will be found. Address, G. HARE, 42, High-street, Mile Town, Sheerness.

TO JOINERS.

WANTED, in the Country, where lodgings and rents are moderate, some GOOD WORKMEN. Wages 4s. 6d per day. Extra time may be made.—Apply to Mr. CHEALE, Uckfield.

WANTED, a BOY, in a Surveyor's Office, who can write a fair hand. He will have the opportunity of learning to draw.—Address, in own handwriting, to H. G. H. 10, Old Jewry Chambers.

WANTED, a GENERAL ASSISTANT.—Apply, by letter, to LAWS & DENNISON, Architects, 12, Doughty-street, W.C.

TO ARCHITECTS' ASSISTANTS.

WANTED, as FIRST ASSISTANT in an Architect's Office, a steady, persevering, and clever Draughtsman, in Italian and the Gothic of the present day; also knowledge of specifications. A fair salary will be given for a permanency.—Address by letter only, inclosing a few sketches, which will be returned, stating age, qualification, and salary required, to ARCHITECT, care of Mr. Alcock, 25, Old Change, E.C.

WANTED, by a thoroughly practical Man, a SITUATION as SHOP FOREMAN of Joiners, or to Take Charge of a Job. No objection to go to a country job. Good reference. Address, A. B. L. care of Mr. Farrett, 14, Palace-road, Lambeth.

TO CARPENTERS, BUILDERS, &c.

WANTED, a SITUATION as GENERAL FOREMAN, or Working Foreman of Carpenters. Town or country. First-class references.—Address, A. B. C. Mr. Boston's, 16, Basinghall-street, City, London.

TO BUILDERS, CONTRACTORS, AND OTHERS.

WANTED, by the Advertiser, a SITUATION as FOREMAN of BRICKLAYERS. Can take out quantities, measure up work, keep accounts, understands drawings, and has a general knowledge of the building trade. Can have six years' character from last employers. No objection to piece-work in town or country.—Address, H. B. No. 2, Percy-terrace, Plumstead, Kent.

TO BUILDERS, PLUMBERS, AND OTHERS.

WANTED, by a respectable Man, a constant SITUATION as first-class PLUMBER, GASFITTER, and HOT-WATER FITTER, or to Take Charge of a Job, either Town or country. An unexceptionable reference given.—Address, J. F. 48, Napier-street, Hoxton.

TO BUILDERS, GLASS-MERCHANTS, PLUMBERS, AND PAINTERS.

WANTED, by the Advertiser, a SITUATION as CLERK, or otherwise. A thorough bookkeeper and accountant, can measure and take out quantities, is quick and correct at dimensions, a practical glass-cutter, glazier, and painter, and well acquainted with other branches of the building trade. Satisfactory references.—Address, A. R. M. Office of "The Builder."

WANTED, a permanent SITUATION as PLUMBER. No objection to fill up time with painting and glazing.—Address, E. Y. 31, New Hampstead-road, Kentish Town.

TO PLUMBERS AND BUILDERS.

WANTED, by a steady Young Man, a SITUATION as PLUMBER. Can do plain zinc-work and gas-fitting.—Address, G. W. No. 8, Duke-street, Lincoln's-inn-fields, London.

TO IRONMONGERS.

WANTED, by a steady Man, and one that thoroughly understands his business, a SITUATION as IRON, ZINC, and TINPLATE WORKER, Gasfitter, Speaking Pipes, &c. and the general routine of the trade. In last place three years. Reference if required.—Address, WM. PARKER, No. 2, Swan Buildings, Swan-alley, Moorgate-street, City.

TO BUILDERS AND CONTRACTORS.

WANTED, by the Advertiser, a RE-ENGAGEMENT as TIMEKEEPER, the works where last employed being completed. No objection to the country. First-class reference.—Address, S. G. V. No. 7, Chapel-side, Moscow-road, Bayswater.

TO PAINTERS AND BUILDERS.

WANTED, by a Young Man, a SITUATION as GRAINER and MARBLER. No objection to fill up time in painting.—Address, J. J. B. No. 99, Great Suffolk-street, Borough, S.E.

TO MASTER BUILDERS.

WANTED, by a steady practical Joiner, a SITUATION as WORKING FOREMAN in a Shop, or to Carry out a Job. Good reference.—Address, E. S. 36, Charrington-street, Oakley-square, London.

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WANTED, by a steady Young Man, aged 22, a SITUATION in the above line as IMPROVER, Town or country.—Address, E. A. 2, Blandford-street, Manchester-square.

TO ARCHITECTS.

WANTED, by an experienced ASSISTANT, who has been engaged in first-class offices, an ENGAGEMENT. Accustomed to prepare fair working and detail drawings, &c. and has a thorough knowledge of Gothic architecture.—Address, C. T. N. Office of "The Builder."

WANTED, EVENING EMPLOYMENT by a Youth of 18. Can draw and tint well (specimens can be shown), is quick at figures, and can assist in taking out quantities, &c. &c.—Address T. T. 103, St. Martin's-lane, W.C.

TO ARCHITECTS, &c.

WANTED, by a PRACTICAL CLERK of WORKS, a RE-ENGAGEMENT in that capacity. Good references will be given.—Address, R. S. T. Office of "The Builder."

TO ARCHITECTS, BUILDERS, CONTRACTORS, &c.

WANTED, by the Advertiser, a thoroughly practical Man, a SITUATION as FOREMAN or MANAGER of WORKS. Has had sixteen years' experience in all kinds of buildings, sewerage, waterworks, excavations, &c. Can level and survey. Good references from London and provincial employers. No objection to country.—Address, B. B. F. 63, Bridge-road, Hammersmith.

WANTED, by an energetic, sober Man, of several years' experience, an ENGAGEMENT as BUILDER'S FOREMAN, Shop or otherwise, or as CLERK of WORKS. Can be highly recommended both for ability and general character. Several years' reference and unexceptionable testimonials. Address, C. 184, Drury-lane, W.C.

WANTED, by a thoroughly practical Man, an ENGAGEMENT, to take charge of the Erection of a Building in Town or Country. Joiner by trade. Aged 30. Thorough knowledge of drawings, and all the Building Trade. First-class references. Address E. B. Post-office, Brompton-row.

WANTED, by a Grainer, PIECE or DAY WORK at the Woods and Marbles.—W. B. Mr. Hayter's, Grocer, John-street, Edgeware-road.

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WANTED, by the Advertiser, an ENGAGEMENT in an OFFICE. Is a good practical draughtsman, measurer, and estimator, and is thoroughly competent in all the duties of an office, both in-door and out. Age 32. Terms, 2*l.* 2*s.* per week. First-class references.—Address, POST-OFFICE, 275, City-road, N.

WANTED, a RE-ENGAGEMENT as CLERK or TIME-KEEPER, by a Young Man, aged 24. Several years' good reference.—Salary required, from 21*s.* to 25*s.* per week.—Address, B. C. 9, Clifton-terrace, Fulham-road, S.W.

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